

**EPA Superfund
Record of Decision:**

**PORTSMOUTH NAVAL SHIPYARD
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KITTERY, ME
05/21/1999**

**INTERIM RECORD OF DECISION
FOR
OPERABLE UNIT 4**

**PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE**

MAY 1999

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ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
AWQC	Ambient Water Quality Criteria
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Chemical of Concern
DOD	Department of Defense
DOI	Department of Interior
EERA	Estuarine Ecological Risk Assessment
FCS	Final Confirmation Study
FFA	Federal Facility Agreement
FS	Feasibility Study
HHRA	Human Health Risk Assessment for Offshore Media
HSWA Permit	Corrective Action Permit under the RCRA Hazardous and Solid Waste Amendments of 1984
IAS	Initial Assessment Study
IRG	Interim Remediation Goals
IRP	Installation Restoration Program
JILF	Jamaica Island Landfill
MEDEP	Maine Department of Environmental Protection
Navy	U S. Navy
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NOAA	National Oceanic and Atmospheric Administration
NPL	National Priorities List
OU	Operable Unit
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PHRE	Public Health and Environmental Risk Evaluation
PNS	Portsmouth Naval Shipyard
RAB	Restoration Advisory Board
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facilities Investigation
RI	Remedial Investigation

ROD	Record of Decision
SAPL	Seacoast Anti-Pollution League
SARA	Superfund Amendments and Reauthorization Act
SWMU	Solid Waste Management Unit
TAG	Technical Assistance Grant
TBC	To-Be-Considered
TRC	Technical Review Committee
U.S. EPA	U S. Environmental Protection Agency

GLOSSARY

Applicable or Relevant and Appropriate (ARARs): The Federal and State environmental rules, regulations, and criteria that must be met by the selected remedy under CERCLA.

Applicable Requirements: Cleanup standards, environmental protection requirements, criteria, or limitations promulgated under Federal or more stringent State law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance at a CERCLA site.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): A federal law passed in 1980 and amended by Congress by the Superfund Amendments and Reauthorization Act of 1986. Pursuant to CERCLA Section 120, the Navy is responsible for investigating and conducting response actions to address releases and threatened releases of hazardous substances at or from the Portsmouth Naval Shipyard. This law established a national trust fund (known as Superfund) to investigate and remediate abandoned or uncontrolled hazardous waste sites.

Feasibility Study (FS): A report that develops and analyzes potential remedial action goals and cleanup alternatives for a CERCLA site based on information collected in a remedial investigation.

Hazard Index: A measure of the potential for toxic (non-cancer related) effects from exposure to non-carcinogenic chemicals. A Hazard Index of 1 or less is considered an acceptable risk level by the U.S. EPA and MEDEP.

Incremental Cancer Risk: The incremental increase in the probability of developing cancer during one's lifetime from exposure to carcinogenic chemicals in addition to the background probability of developing cancer. The U.S. EPA Incremental Cancer Risk goal is between 10^{-6} (1 in a million) to 10^{-4} (1 in ten thousand) chance of cancer risk. Cancer risk below or within the risk goal is considered an acceptable risk level by the U.S. EPA. The MEDEP Incremental Cancer Risk Guideline is 10^{-5} (1 in a hundred thousand) chance of cancer risk. Cancer risk below the risk guideline is considered an acceptable risk level by the MEDEP.

Operable Unit: Operable units are site-management tools that define discrete steps towards comprehensive response actions to address hazardous substance releases at a CERCLA site, based on geographical portions of a site, specific site problems, initial phases of an action, or any set of actions performed over time or concurrently at different parts of the site.

Principal Threat Wastes: Source materials considered to be highly toxic or highly mobile which generally cannot be contained in a reliable manner and/or would present a significant risk to human health or the environment should exposure occur.

Proposed Plan: A plan for site cleanup that is made available to the public for comment.

Record of Decision (ROD): A public document that explains which cleanup alternative was selected for a CERCLA site and establishes enforceable performance standards for the cleanup.

Remedial Investigation (RI): A summary report of the information collected on the nature and extent of contamination and the problems that the contamination could potentially cause (including assessment of human health and ecological risks) at a CERCLA site.

Relevant and Appropriate Requirements: Cleanup standards, environmental protection requirements, criteria, or limitations promulgated under Federal or more stringent State law that, while not "applicable", do address problems or situations sufficiently similar (relevant) to those encountered at the CERCLA site, that their use is well suited (appropriate) to the particular site.

Resource Conservation and Recovery Act (RCRA): A federal act which gives EPA the authority to develop a nationwide program to regulate hazardous waste from "cradle to grave". Enacted in 1976, the Act was established to "protect human health and the environment from the improper handling of solid waste and encourage resource conservation."

Risk Assessment: Evaluation of current and future potential for adverse human health or environmental (ecological) effects from exposure to chemicals

Sediment: Soil, sand, and material typically transported by erosion from soil to the bottom of surface water bodies, such as streams, rivers, ponds, and lakes.

Surface Water: Water from streams, rivers, ponds and lakes. For this Record of Decision, surface water means water of the Piscataqua River.

To-Be-Considered Criteria (TBC): Non-promulgated, non-enforceable guidelines or criteria that may be useful for determining what is protective of human health and environment.

1.0 DECLARATION FOR THE INTERIM RECORD OF DECISION

1.1 SITE NAME AND LOCATION

This Interim Record of Decision (ROD) addresses Operable Unit 4 (OU4), Offshore Areas of Concern, at Portsmouth Naval Shipyard (PNS), Kittery, Maine.

1.2 STATEMENT OF BASIS AND PURPOSE

This Interim ROD serves as the statement of basis and purpose of selection of the interim remedy for environmental media in the offshore areas of concern (OU4). The interim remedy for OU4 is monitoring of offshore environmental media (e g., sediment) in accordance with the final interim monitoring plan.

The selected interim remedial action was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, commonly known as Superfund, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This interim remedy was selected based on information contained in the Administrative Record for the site, which was developed in accordance with Section 113(k) of CERCLA, and is available for public review in the Information Repositories at the Rice Public Library in Kittery, Maine, and the Portsmouth Public Library in Portsmouth, New Hampshire.

The Maine Department of Environmental Protection (MEDEP) concurs with the selected interim remedy (see Appendix A).

1.3 ASSESSMENT OF OU4

The Navy has determined that human health risks for OU4 exceed regulatory guidelines for consumption of seafood. However, the human health risk assessment could not differentiate whether the chemicals that cause the risk were from PNS sources or from other sources within the lower Piscataqua River. Also, because risks are similar to or lower than other areas of the coastal waters of Maine, it would not be feasible to address human health risk until an overall effort is made (by all contributors) to reduce contamination in the lower Piscataqua River.

The Navy has determined that ecological risks for OU4 are negligible to intermediate. Currently, no areas of high ecological risk have been identified

The risks identified for OU4 are based on data collected from sampling that was completed in 1993 and earlier. The Navy has determined that interim monitoring is warranted to provide current data on the offshore areas identified herein to determine whether onshore remedial actions, natural processes, and/or other sources have affected (positively or adversely) the concentration of contaminants in OU4.

Actual or threatened releases of hazardous substances from the sites in this OU, if not addressed by implementing the response action selected in this ROD, may present a current or potential threat to public health, welfare, or the environment.

1.4 DESCRIPTION OF THE SELECTED REMEDY

The interim remedy consists of offshore monitoring of environmental media (e.g., sediment) in the areas offshore of PNS that were potentially affected by onshore Installation Restoration Program (IRP) sites. Environmental media will be monitored to determine whether over the course of interim monitoring current and future concentrations of chemicals of concern (metals, polychlorinated biphenyls [PCBs], and polyaromatic hydrocarbons [PAHs]) in the offshore areas identified herein are at acceptable levels (Interim Remediation Goals [IRGs]). In addition, interim monitoring will be used to meet the following objectives: (1) provide information on the current condition of the offshore areas; (2) provide information to support the identification and selection of any removal action, any additional interim action, or a final remedy; (3) be consistent with any final remedial action; and (4) provide a basis for any monitoring that may be incorporated as part of the final remedy. Interim offshore monitoring will be conducted in accordance with a final interim monitoring plan, which will specify the media, location, analytes, procedures, and frequency of sampling. Interim action decisions that will be made based on the environmental data collected, including IRGs, will be specified in the final interim monitoring plan.

1.5 STATUTORY DETERMINATIONS

The selected interim remedy is protective of human health and the environment in the short term and is intended to provide adequate means to take protective measures until the final ROD is signed; complies with Federal and State Applicable or Relevant and Appropriate Requirements (ARARs) for this limited-scope action, and is cost effective. This action is interim and is not intended to use permanent solutions and alternative treatment (or resource recovery) technologies. Because this action does not constitute the final remedy for OU4, the statutory preference for remedies that use treatment as a principal element to reduce the toxicity, mobility, or volume of contaminated media is not addressed here but will be addressed by the final remedy. There have been no principal threat wastes identified at OU4. Subsequent actions are planned to address the potential threats posed by the conditions at OU4. Because this is an interim action ROD, review of site conditions and implementation of this interim remedy will be ongoing as the Navy continues to develop final remedial alternatives for OU4.

1.6 SIGNATURE AND SUPPORT AGENCY ACCEPTANCE OF REMEDY

This Interim ROD for OU4 represents the selection of interim offshore monitoring under CERCLA. The foregoing represents the selection of a remedial action by the Department of Navy and the U.S. Environmental Protection Agency (U.S. EPA), Region I, with the concurrence of the MEDEP.

Concur and recommend for immediate implementation:

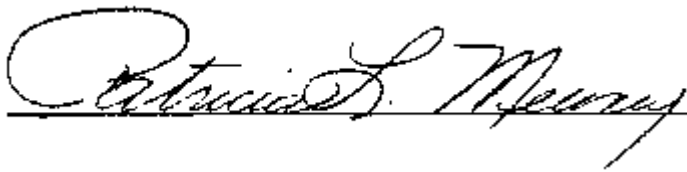
Department of the Navy

By V.T. Williams

Date 7 May 1999

V.T. Williams
Captain, USN
Commander,
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United States Environmental Protection Agency, Region I

By 

Date 5/21/99

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2.0 INTERIM DECISION SUMMARY

2.1 SITE NAME, LOCATION, AND DESCRIPTION

Portsmouth Naval Shipyard (PNS) is located on an island in the Piscataqua River, referred to on National Oceanic and Atmospheric Administration (NOAA) nautical charts as Seavey Island, with the eastern tip given the name Jamaica Island. Attached by a rock causeway is Clark's Island, which is not industrialized. The Piscataqua River is a tidal estuary that forms the southern boundary between Maine and New Hampshire. PNS is located at the mouth of the Great Bay Estuary (commonly referred to as Portsmouth Harbor). The locations of the Great Bay Estuary and PNS are shown on Figure 2-1.

Operable Unit 4 (OU4) includes areas offshore of PNS that were potentially affected by PNS onshore Installation Restoration Program (IRP) sites. OU4 is divided into six areas referred to as Areas of Concern (AOCs), which are shown on Figure 2-2. These areas were identified in the Revised Draft Final Estuarine Ecological Risk Assessment (NCCOSC, 1997) as nearshore habitats adjacent to PNS that may have been affected by onshore IRP sites. A conceptual model developed as part of the risk assessment was used to identify the AOCs. These areas are referred to as Clark Cove AOC, Sullivan Point AOC, DRMO Storage Yard AOC, Dry Docks AOC, Back Channel AOC, and Jamaica Cove AOC. Two IRP sites, Site 5, Industrial Waste Outfalls, and Site 26, Portable Oil/Water Tanks, were considered sites that had offshore impacts and no onshore impacts. Therefore, these two sites were included only as part of OU4. Both sites are located within the Dry Docks AOC and any impacts that Sites 5 and 26 may have had on the offshore will be addressed as part of the Dry Docks AOC. The location of Site 5 is shown on Figure 2-2. Because Site 26 consists of portable tanks, the location is not shown on Figure 2-2. Currently the U.S. Navy (Navy) has proposed removing Site 26 from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) program (see discussion in Section 2.2).

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

PNS is engaged in the construction, conversion, overhaul, and repair of submarines for the Navy. There is a long history of shipbuilding in Portsmouth Harbor dating back to 1690, when the first warship launched in North America, the *Falkland*, was built. PNS was first established as a government facility in 1800, and it served as a repair and building facility for ships during the Civil War. The first government-built submarine was designed and constructed at PNS during World War 1. A large number of submarines have been designed, constructed, and repaired at this facility from 1917 to the present. PNS continues to service submarines as its primary military focus.

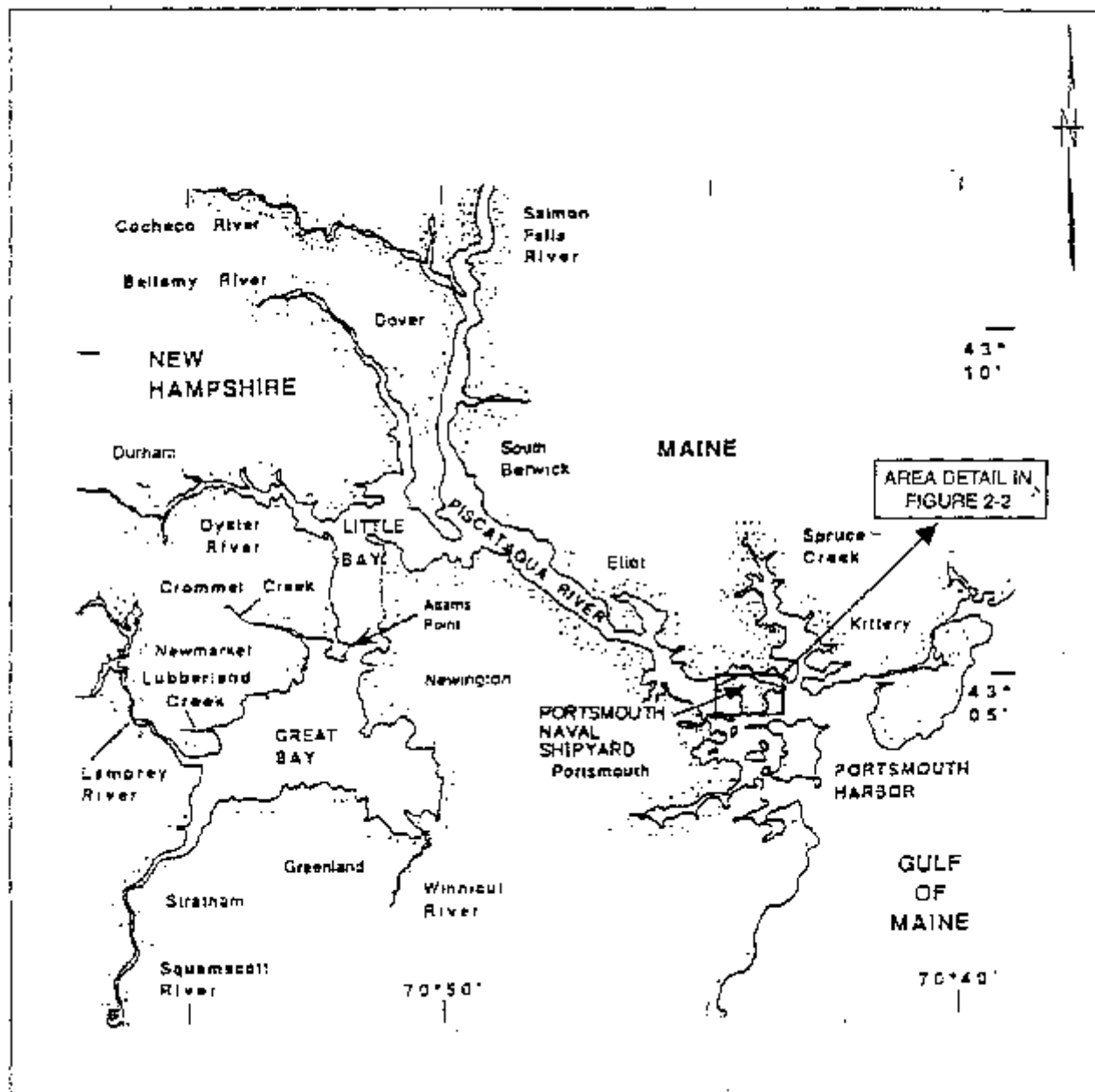


FIGURE 2-1

GREAT BAY ESTUARY AND PORTSMOUTH NAVAL SHIPYARD LOCATION
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE

Years of shipbuilding and submarine repair work at PNS have resulted in the release of hazardous substances into the soils, groundwater, surface water, and sediment on and around Seavey Island. As a result, investigations and remedial activities have been performed under the Department of Defense (DOD) IRP. The IRP is designed to identify contamination of DOD facilities and lands resulting from past operations, to investigate the extent and severity of contamination, and to institute corrective measures. The IRP parallels CERCLA and is further discussed in the Community Relations Plan for PNS (B&R Environmental, 1996).

Investigations of hazardous waste contamination at PNS began in 1983. The U.S. Environmental Protection Agency (U.S. EPA) became involved with PNS in 1985, under the authority of the Resource Conservation and Recovery Act (RCRA). Since 1988, the Maine Department of Environmental Protection (MEDEP) has also provided oversight of investigation and remediation at PNS. In March 1989, the U.S. EPA issued a Corrective Action Permit under the RCRA Hazardous and Solid Waste Amendments of 1984 (HSWA Permit) (U.S. EPA, 1989) that required PNS to investigate 13 solid waste management units (SWMUs) and take appropriate corrective action. However, effective May 31, 1994, PNS was included on the National Priorities List (NPL). The subsequent studies have been conducted under the authority of CERCLA, commonly known as Superfund. Consistent with the transition from RCRA to CERCLA, the SWMU terminology was replaced with "site." In addition, the sites identified in the HSWA Permit as well as several newly identified sites have been grouped, based on similar characteristics or proximity, into five OUs. Four OUs (OU1, OU2, OU3, OU5) address onshore contamination from IRP sites, whereas OU4 addresses offshore contamination from the IRP sites. A Federal Facility Agreement (FFA) is being developed for PNS between the U.S. EPA and Navy. The FFA will enable the Navy to meet the provisions of CERCLA, RCRA, and applicable state laws. Among other things, an FFA outlines roles and responsibilities, establishes deadlines/schedules, outlines work to be performed, and provides a dispute resolution process for primary documents. The FFA will serve as an Inter-Agency Agreement between the U.S. EPA and Navy in accordance with CERCLA.

Various investigations have been conducted at PNS beginning with the Initial Assessment Study (IAS) (Weston, 1983), conducted in 1983, that identified and assessed sites posing a potential threat to human health and the environment. The final phase of this study was completed in 1986 with the issuance of a Final Confirmation Study (FCS), (LEA, 1986), which evaluated the sites identified in the IAS to confirm the presence of contamination. In accordance with the HSWA Permit requirements, a RCRA Facilities Investigation (RFI) was performed. The RFI consisted of several phases of investigations spanning from October 1989 to February 1992 and the results of the RFI were assembled into the RFI Report (McLaren/Hart, 1992). The RFI "Approval with Conditions" was issued by the U.S. EPA in March of 1993 and the Addendum to the RFI report (McLaren/Hart, 1993) was prepared to address the requirements of

the "Approval with Conditions" to the extent possible. Several requirements needed additional field investigation, which was conducted as part of the RFI Data Gap field work. The results of the field work are provided in the RFI Data Gap Report (Halliburton NUS, 1995) and are considered supplemental to the RFI report. Four rounds of groundwater monitoring and seep and co-located sediment sampling were conducted from 1996 to 1997. The results will be provided in summary reports, currently under preparation. Remedial investigations of two sites (Sites 10 and 29), and Site Screening Investigations of three sites (Sites 30, 31, and 32) were conducted in the Summer of 1998 Reports summarizing the results of the investigations are currently under preparation.

A risk assessment of onshore media (e.g., soil, groundwater) was conducted using the analytical data collected during the RFI and the results are provided in the Public Health and Environmental Risk Evaluation: Part A Human Health Risk Assessment (PHERE), (McLaren/Hart, 1994b). The offshore area was investigated and risks evaluated as part of the Estuarine Ecological Risk Assessment (revised draft final, NCCOSC, 1997) and Human Health Risk Assessment (McLaren/Hart, 1994a). These are discussed further in Section 2.6.

The IRP sites and OU designations are provided in Table 2-1. This table also provides a brief description of the sites and remedial activities that have occurred at the sites. Further information on these sites is provided in the Community Relations Plan (B&R Environmental, 1996). As shown in Table 2-1, two IRP sites (Sites 5 and 26) are included within OU4. These sites were included because they had offshore impacts and did not have onshore impacts. The offshore impacts from these two sites will be addressed as part of the Dry Docks AOC for this interim action. The two sites are described below. The offshore area is described further in Section 2.5.

Site 5, the Industrial Waste Outfalls, consisted of numerous discharge points along the Piscataqua River at the western end of PNS in the dry dock area. The outfalls were used to discharge liquid industrial wastes before the Industrial Waste Treatment Plant was constructed. The outfalls are believed to have operated from 1945 to 1975 and are located near Berths 6, 11, and 13. Discharges included wastes from plating and battery shops contained in Buildings 79 and 238. The wastewaters may have contained heavy metals (mercury, lead, cadmium, chromium, copper, and zinc), oils and grease, and polychlorinated biphenyls (PCBs). In 1978, dredging was conducted to deepen Berths 6, 11, and 13 and the dredge spoils were disposed at the Jamaica Island Landfill (JILF) (B&R Environmental, 1996). In addition, maintenance dredging is conducted periodically in the berth areas and the dredged spoils are disposed of offsite in accordance with federal, state, and local regulations.

Site 26, the Portable Oil/Water Tanks, was used for cleaning submarine bilges and various tanks at the submarine berths. Resulting oil wastes were pumped to railroad tank cars and properly disposed.

TABLE 2-1
OPERABLE UNITS DESIGNATION⁽¹⁾
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE I OF 2

Operable Unit	Site	Site Name	Dates of Operation	Description and Remedial Activities ⁽²⁾
OU1	10	Building 238, Battery Acid Tank No. 24	1974 to 1984	Storage tank for waste battery acid, removed from operation in 1984 when tank found to be leaking. Tank and soils excavated in 1986. Investigated as part of RFI and remedial investigation in 1998.
	21	Acid/Alkaline drain Tank	1974 to 1991	Tank used for discharge from clothes washing machines used to clean air filters. Tank excavated in 1991. No Further Action for Soil documented in 1996. Groundwater being addressed as part of OU1.
OU2	6	Defense Reutilization and Marketing Office Storage Yard (including Impact area Quarters S, N, and 68)	Approximately 1960s to present	Temporary storage area for used materials prior to offsite recycling and disposal. Investigated as part of the IAS, FCS, RFI, and RFI Data Gap Investigation. In 1993, sections of site capped or paved, storm water controls installed, and new concrete curb installed
	29	Incinerator Site	1918-1975	Area beneath and around Industrial Waste Treatment Plant originally used for open pit burning from 1918 to 1965 and for incinerator burning from 1965 to 1975. Investigated as part of RFI and remedial investigation in 1998.
OU3	8	Jamaica Island Landfill (including Impact Area Former Child Development Center [CDC])	Approx. 1945 to 1978	Landfill for general refuse, trash and construction rubble and various industrial wastes. Site investigated as part of the IAS, FCS, RFI, and RFI Data Gap Investigation. In 1978, a dike and soil cover were placed at a portion of the landfill to contain dredged spoils from Berths 6, 11, and 13.
	9	Mercury Burial Sites (MBI and MBII)	Buried between 1973 and 1975	Concrete blocks and pipes containing mercury contaminated washes buried at two locations within Site 8. The site was investigated as part of the IAS, RFI, and RFI Data Gap Investigation. MBI was removed in 1997. MBII has not been located.

TABLE 2-1
OPERABLE UNITS DESIGNATION⁽¹⁾
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE
PAGE 2 OF 2

Operable Unit	Site	Site Name	Dates of Operation	Description and Remedial Activities ⁽²⁾
OU3(Continued)	11	Former Waste Oil Tanks 6 & 7	1943 to 1989	Two tanks used for storage of waste oils prior to offsite disposal. Tanks removed in 1989. The site has been investigated as part of the RFI and RFI Data Gap Investigation.
OU4	5	Industrial Waste Outfalls	1945 to 1975	Numerous discharge points located in the dry dock area used to discharge liquid industrial waste. The site was investigated as part of the RFI. Offshore area nearby also investigated as part of the EERA.
	26	Waste Oil/Water Portable Tanks ⁽³⁾	Unknown to present	Portable tanks used for cleanout of submarine bilges and various tanks in the dry dock area. Offshore area nearby investigated as part of the EERA.
	--	Offshore Area Potentially Impacted by PNS Onshore Sites 6,8,9,10,11,27, and 29	---	Area offshore of PNS affected by PNS onshore sites. Offshore area investigated as part of the EERA.
OU5 ⁽³⁾	27	Berth 6 Industrial Area	1978	An underground pipeline near Berth 6 ruptured in 1978 and released #6 fuel oil. Sections of the pipeline and surrounding contaminated soils were excavated.

- 1 Sites under investigation in the site screening process are not currently included in an OU. These sites include Site 30, Galvanizing Plant (Building 184); Site 31, West Timber Basin Landfill, Site 32, Topeka Pier Site and the Oil Gasification Plant.
- 2 Groundwater monitoring and seep/sediment sampling were conducted during four rounds of sampling in from 1996 to 1997. The results of these investigations will be presented in summary reports, which are currently under preparation.
- 3 The Navy has proposed transferring Site 26 and Site 27 from the CERCLA program to the appropriate regulatory program.

Although the tanks continue to be used, operations have been modified and equipment improved to eliminate spillage and to improve handling methods (B&R Environmental, 1996). Currently the Navy has proposed removing Site 26 under CERCLA because of the CERCLA petroleum exclusion and because the tanks are regulated under another environmental program (RCRA or the Maine Hazardous Waste, Septage and Solid Waste Management Act).

2.3 HIGHLIGHTS OF COMMUNITY PARTICIPATION

Community relations activities for PNS began as early as August 1986 when the first public information workshop was held regarding environmental restoration work at the PNS. In addition to community workshops, a Technical Review Committee (TRC) organized meetings beginning in December 1987 and on an as-needed basis thereafter to provide an opportunity for the technical experts performing environmental investigations to meet with appointed citizens and PNS personnel to discuss and solicit community input on the technical progress and interim findings of the investigations. The TRC evolved into a Restoration Advisory Board (RAB) with the inclusion of additional community members in 1995. The RAB generally meets every two months. The RAB provides the forum for discussion and exchange of information between the Navy, regulatory agencies, and the community on environmental restoration activities, and it provides an opportunity for individual community members to review the progress and participate in the decision-making process for various IRP sites, including OU4. A local citizen's group (the Seacoast Anti-Pollution League or SAPL) received a Technical Assistance Grant (TAG) funded by U.S. EPA to hire consultants, as necessary, to help the lay person understand technical issues. The PNS Public Affairs Office has interviewed members of the public in Seacoast communities to establish a baseline of the public's knowledge and concerns about the PNS IRP and enhance open communications on topics of public concern. Details of the history, objectives, and implementation techniques of community relations activities at the PNS can be found in the Community Relations Plan (B&R Environmental, 1996).

A notice of availability of the interim proposed remedial action plan for OU4 and documents related to OU4 and the interim remedy was published on October 28, 1998 in *The Portsmouth Herald* and in *Foster's Daily Democrat*. The documents are available to the public in the Portsmouth Naval Shipyard Information Repositories located at the Rice Public Library in Kittery, Maine and the Portsmouth Public Library in Portsmouth, New Hampshire. The notice also announced the start of the 30-day comment period, which ended on November 30, 1998.

The notice published on October 28, 1998 also included an invitation to the public to attend a public meeting held at the Days Inn in Kittery, Maine, on November 4, 1998. The public meeting presented the proposed interim remedy and solicited oral comments. At the public meeting, personnel from the Navy, the U.S. EPA, and the MEDEP answered questions from the attendees during the informal portion of the

meeting. In addition, public comments on the interim proposed plan were formally received and transcribed. The transcript for the public comments is provided in Appendix B Responses to the comments received during the public comment period are provided in the Responsiveness Summary in Section 3.0.

The PNS Information Repositories are located at the Rice Public Library in Kittery, Maine and the Portsmouth Public Library in Portsmouth, New Hampshire. Documents which support the selection of the interim remedy for OU4 are available for public review in the Information Repositories.

2.4 SCOPE AND ROLE OF OPERABLE UNIT 4

There are five operable units at PNS. Four OUs (OU1, OU2, OU3, and OU5) consist of onshore sites that have affected onshore areas. OU4 consists of the offshore AOCs and the two IRP sites (Sites 5 and 26) that have affected the offshore only. Remedial investigation (RI) related activities of OU4 have been conducted and include sampling and analyses for various environmental media: surface water, sediments; and biota such as fish and shellfish tissue and eelgrass. RI activities also included assessment of human health and ecological risks. This interim action consists of monitoring at OU4 until a feasibility study (FS) is conducted and a final remedy is implemented. Because the other OUs may have offshore impacts, the final action may incorporate remedies for these onshore OUs, if necessary. The final remedy for OU4 will be selected following community involvement and documented in a final Record of Decision (ROD). Monitoring as described in this interim remedy may be incorporated in the final remedy for OU4

2.5 SITE CHARACTERISTICS

PNS is located on an island in the Piscataqua River, near the mouth of the Great Bay Estuary Piscataqua River, Little Bay, and Great Bay, and seven converging rivers form the Great Bay Estuary (see Figure 2-1). The Great Bay Estuary extends about 20 to 25 miles into New Hampshire and has a drainage area of 930 square miles. The Great Bay Estuary is a drowned river valley, with high tidal energy and characteristic deep channels with fringing mud flats. The main habitat types within the estuary are eelgrass, mud flat, salt marsh, channel bottom, and rocky intertidal (Short, 1992). Much of the estuarine shoreline is undeveloped, but industrial activities in southeast New Hampshire, such as foundries and tanneries, discharged wastes into the estuary, especially from 1940 to 1976. Both point-source and non-point-source discharges exist throughout the Great Bay Estuary. The largest volume of discharge is from the more than 16 municipal sewage treatment plants serving adjacent communities (Johnston et al., 1994). Because of the strong tidal influence, with high tidal volume and rapid currents, much of the contamination released into the estuary has been quickly flushed out to the Gulf of Maine Although not heavily

contaminated, the Great Bay Estuary exhibits warning signals of its fragility as indicated by shellfishing closures, loss of eelgrass habitat, and increasing shoreline development (Short, 1992).

Portsmouth Harbor's main channel is approximately 75 feet deep (mean low water) and the Back Channel is approximately 20 feet deep (mean low water) in the vicinity of Seavey Island. The water mass in the vicinity of PNS is predominantly marine (salinity levels exceed 20 parts per thousand) (McLaren/Hart, 1994a) and is not used for human consumption. Portsmouth Harbor has been closed for shell-fish harvesting since 1946. The reason for closure is elevated levels of coliform bacteria attributed to municipal sewage treatment plants in Dover, Portsmouth, and Kittery exceeding design capacity during periods of heavy rainfall (McLaren/Hart, 1991). Various vessels operate in the harbor, including commercial tankers, cargo ships, fishing trawlers, lobster boats, and recreational vessels, as well as submarines located at PNS. Parts of the Portsmouth Harbor shoreline are heavily developed, and PNS, commercial docks, and marinas dominate the landscape. Numerous parks and historic areas are also located nearby.

Tidal currents, the horizontal motions associated with the tidal change in water, predominate in Portsmouth Harbor. Semidiurnal tides occur in the harbor. Near Seavey Island, the mean tidal range is 8.1 feet. The spring tidal range is 9.3 feet. The overall ebb and flood currents in the vicinity of the shipyard are high. The average flood currents range from 3.0 knots south of Seavey Island to 3.3 knots southwest of Badgers Island. The average ebb currents are 3.8 knots south of Seavey Island and 3.7 knots southwest of Badgers Island. Because of the strong currents, most ships wait for favorable tides before moving up the narrow Piscataqua River. Estimated flushing rates of Portsmouth Harbor and the lower reaches of the Great Bay Estuary range from 3.3 to 6.3 tidal cycles (McLaren/Hart, 1994a).

2.5.1 Portsmouth Harbor's Flora and Fauna

Portsmouth Harbor supports faunal and floral communities typical of estuarine areas along the Maine and New Hampshire coasts. Salt marsh vegetation can be observed in several areas along the harbor shore. These are frequently dominated by several species of marsh grasses (Fay, 1986). Shorelines in the Portsmouth Harbor area are a mixture of steep, rocky banks and low-lying marshlands. The tidal marshlands and intertidal areas contain ecologically important habitats. The steep interface between shoreline and inland areas in this area reduces the diversity of vegetation and thus allows dry-land species to exist in proximity to the shoreline.

Portsmouth Harbor and the immediate vicinity provide habitat for various species of gulls, terns, shorebirds, wading birds, and songbirds. Although gulls are present throughout the year, other species are most numerous during the spring and fall migrations. Various species of waterfowl, including black ducks, green-winged teal, and Canada geese, migrate along the coast of New Hampshire. In addition, Great Bay is an

important resting and wintering area for waterfowl. About three-quarters of all waterfowl wintering in New Hampshire do so in this estuary. Although the heaviest populations occur in the winter, this area is used by some avian species during all parts of the year. Undeveloped areas serve as rookeries for birds (such as gulls) and mudflats around the islands provide feeding areas (McLaren/Hart, 1994b).

Portsmouth Harbor area affords a variety of aquatic habitats. The harbor's physical conditions, coupled with the tidal influence, lead to local variations in substrate composition, salinity, water depth, and current velocity. Benthic investigations, as part of a dredging study in 1976 (Normandeau Associates, 1978), revealed differences in faunal communities with respect to substrate characteristics. The soft-bottomed harbor areas were found to have the greatest species diversity. These areas were dominated by starfish, sand dollars, barnacles, mollusks, crustaceans, segmented worms, mussels, and a number of species of clams. The hard substrates are inhabited by anemones, mollusks, barnacles, and mussels. These areas also support a variety of macroalgae, such as *Ascophyllum nodosum* and *Fucus vesiculosus*. Lobsters, a commercially-important species, and several genera of crabs (rock crab, green crab, and hermit crab) occur in both soft- and hard-bottomed areas.

Fish communities in the harbor area include both resident and migratory species. Common residents include flounders (winter, smooth, windowpane, and possibly yellowtail), Atlantic cod, sculpins (shorthorn and longhorn), sea raven, hakes (red, white, and silver), ocean perch, dogfish, skate (little clearnose and barndoor), pollack, and cunner. Another fish, the shortnose sturgeon, has also been identified as a resident of this estuarine system. The shortnose sturgeon is on the Federal Endangered Species List; however, studies to date have encountered only one shortnose sturgeon (in 1971) (McLaren/Hart, 1994a).

Migratory fish use this area as both a zone of passage and as seasonal habitat. Anadromous migrations (from seawater to fresh water for breeding purposes) generally occur from mid-April through mid-June and from mid-August through mid-November. Smelt, silversides, and blueback herring pass through this area seasonally. Striped bass, although classified as an anadromous species, are considered summer residents of this area. Coho salmon, which are not native to the area, have recently been introduced into this estuary as part of an experimental program. Seasonal migrants to the harbor area include American sandlance, Atlantic mackerel, bluefish, Atlantic menhaden (summer residents), and Atlantic herring (winter residents) (McLaren/Hart, 1994a). No resident marine mammals are present in Portsmouth Harbor. Harbor seals occasionally enter the harbor (Fay, 1986).

2.5.2 Offshore AOCs at PNS

The offshore AOCs at PNS (see Figure 2-2) include pelagic, eelgrass, intertidal mudflat, salt marsh, channel bottom/subtidal, and/or rocky intertidal habitats. The pelagic habitat is characterized by open surface water. A diverse assemblage of phytoplankton, zooplankton, and pelagic fish are found in the

open water. The habitat provides food for estuarine birds and supports recreational and commercial fisheries (NCCOSC, 1997).

Eelgrass habitats (characterized by the presence of the rooted marine angiosperm *Zostera manna*) occur as large submerged meadows and small contiguous beds in intertidal and subtidal areas. Eelgrass habitats serve as breeding areas and nursery grounds for finfish and invertebrates. They are feeding areas for many fish, invertebrates, and birds. Because eelgrass blades slow the movement of water particulates tend to settle in eelgrass beds. Therefore, these habitats tend to be depositional areas for suspended sediments. At PNS, eelgrass beds have been identified at the western end of Seavey Island (by Jamaica Cove), off Sullivan Point, at the mouth of Clark Cove, and in the Back Channel (NCCOSC, 1997).

The intertidal mudflat habitat is an important area of benthic invertebrate production. High densities of worms and bivalves are found in mudflats; therefore, these areas attract birds, crabs, and fish. Horseshoe crabs feed extensively in mudflat areas during high tide and then migrate into subtidal zones during low tide. Mudflats occur in the lower Piscataqua River, generally as muddy-sand or sandy-mud areas fringing the shoreline. At PNS, mudflats occur along the Back Channel, off Jamaica Island, and around Clark's Island (NCCOSC, 1997).

Salt marshes provide habitat for juvenile fish, feeding areas for birds, and homes for numerous insect species, amphipods, and snails. Salt marshes are also used by terrestrial mammal species such as deer, mink, and otter. Like eelgrass beds, salt marshes function as sediment traps and are generally considered to be depositional areas, except in locations where erosion is evident. At PNS, salt marshes have been identified inside Clark Cove, outside the causeway to the west of Clark's Island, and at three locations in the Back Channel (NCCOSC, 1997).

The channel bottom/subtidal habitat provides refuge for fish and invertebrates that retreat from eelgrass beds, tidal marshes, and mudflats at low tide. Soft-bottom conditions provide habitat for mollusks, crustaceans, and fish. Hard-bottom conditions provide habitat for bivalves, crustaceans, echinoderms, and fish. Fine-grained depositional areas occur outside the main flow of the Piscataqua River, whereas coarse-grained material occurs in regions experiencing tidal scouring and active erosion. To a large degree, the sediment determines the nature of the types of species in this habitat (NCCOSC, 1997)

The rocky intertidal habitat occurs sporadically along shorelines and covers some extensive outcrops. The habitat is dominated by macroalgal species that release reproductive structures and tissues to the estuary. The habitat is important to crustaceans, arthropods, isopods, and crabs. It is a feeding area for predatory fish at high tide and some birds at low tide. At IONS, the rocky intertidal habitat occurs in many

locations along Seavey and Jamaica Islands where the shoreline is exposed to river currents and there is not appreciable fine-grained sediment accumulation (NCCOSC, 1997).

Remedial investigations of OU4 have included sampling and analysis of surface water, sediment, and/or biota as part of the RCRA Facility Investigation (McLaren/Hart, 1992), and as part of Phase I and Phase II of the sampling for the Estuarine Ecological Risk Assessment (EERA) (NCCOSC, 1997). Human health and ecological risk assessments have been conducted and are discussed further in the following section.

2.6 SUMMARY OF SITE RISKS

The Revised Draft Final Estuarine Ecological Risk Assessment (NCCOSC, 1997) provides the details on the assessment of ecological risks for OU4. The Human Health Risk Assessment for Offshore Media (HHRA) (McLaren/Hart, 1994a) and the Phase I/Phase II Offshore Data Comparative Analysis (TtNUS, 1998) provide the details on the assessment of human health risks for OU4. The results of the risk assessments and the data comparative analysis are provided below.

2.6.1 Estuarine Ecological Risk Assessment

The purpose of the EERA was to assess the potential adverse environmental effects from past discharges of contaminants from PNS to the offshore environments of the Piscataqua River and Great Bay Estuary. Two functional phases of the EERA were developed to fulfill this objective. Phase I of the EERA (Johnston et al, 1994), initiated in September 1991 and completed in May 1993, assessed the environmental quality in the Great Bay Estuary, focusing on the lower Piscataqua River area in relation to PNS. The objective of Phase II of the EERA, the analysis phase initiated in July 1992 and completed in the summer of 1995, was to test hypotheses from Phase I and characterize the ecological risk from PNS.

Various studies were conducted as part of the Phase I and Phase II EERA investigations. Studies conducted during Phase I included chemical markers evaluation; sediment textural description; water column conditions evaluation; infaunal invertebrate assessment; microbiological contamination studies; sediment and water column toxicity tests; eelgrass community investigation; macroalgal community assessment; flounder and lobster population assessment; blue mussel population survey; deployment of blue mussels for tissue residue analysis; and chemical analyses of various media from Great Bay Estuary evaluation. During Phase II, studies included chemical marker evaluation, sediment textural description; eelgrass community investigation; lobster use of eelgrass habitat studies; salt marsh community investigation; microbiological contamination studies; winter flounder investigation; blue mussel population study; infaunal invertebrate assessment; contaminant levels in lobster, mussel, eelgrass, and winter flounder evaluation; exposure and response investigations; estuarine dynamics and water quality assessment; and water column conditions characterization.

Phase I and Phase II data and conclusions were synthesized to assess potential risks to the estuarine environment in the vicinity of PNS. A model was developed for the EERA that describes exposure pathways for contaminants, identifies habitats and components of the ecosystem at risk, and defines AOCs around PNS. The habitats and components of the ecosystem at risk were grouped as assessment endpoints for the evaluation of risk. An assessment endpoint is a component of the ecosystem that may be impacted by the stressors of concern, has ecological and societal value, and represents a component of the ecosystem that can be protected. Assessment endpoints of pelagic community, epibenthic community, benthic community, eelgrass community, salt marsh community, and avian community were selected to assess their vitality and relate exposure levels to potential effects. Data were developed to evaluate stressor exposure level and assess ecological effects. Screening procedures were conducted to identify contaminants and areas of concern and to identify links to sources of contaminant release from PNS.

A weight-of-evidence approach was used to characterize risk for each assessment endpoint at each AOC. The weight-of-evidence approach considered the strengths and weaknesses of the various measurement methods of exposure and effect to draw conclusions from the multiple measures collected during the EERA. The weight-of-evidence approach is discussed in detail in the Revised Draft Final EERA (NCCOSC, 1997).

Based on the weight-of-evidence approach, the risk determinations for each assessment endpoint at each AOC were made and are provided in Table 2-2. Most AOCs had either low or intermediate risk overall. No assessment endpoints had high risk. The ecological risks for each assessment endpoint were linked back to surface water and/or sediment exposure for chemicals that may have originated from onshore IRP sites (i.e., chemicals of potential concern). The chemicals of potential concern were identified as the chemicals that were more likely to exceed benchmark concentrations than ambient concentrations were likely to exceed benchmark concentrations, and could be linked to an onshore IRP site. The chemicals of potential concern (metals, PCBs, and polyaromatic hydrocarbons [PAHs]) and the risks associated with each AOC for surface water and sediment exposure are provided in Table 2-3.

2.6.2 Human Health Risk Assessment Report for Offshore Media

The HHRA (McLaren/Hart, 1994a) was prepared as an addendum to the Public Health and Environmental Risk Evaluation (PHERE) (McLaren/Hart, 1994b). It used analytical data collected as part of Phase I of the EERA (Johnston et al., 1994). Phase II data were not available at the time the HHRA was conducted; therefore, Phase II data were not included in the human health risk assessment.

TABLE 2-2

**SUMMARY OF ECOLOGICAL RISK TO ASSESSMENT COMMUNITIES IN THE AOCs
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**

Area of Concern	Assessment Community and Risk Assessment conclusions ⁽¹⁾				
	Pelagic	Epibenthic	Benthic	Eelgrass	Salt Marsh
	Magnitude/Confidence	Magnitude/Confidence	Magnitude/Confidence	Magnitude/Confidence	Magnitude/Confidence
Clark Cove	Low/Medium	Low/Medium	Low/High	Intermediate/Medium	Low/Medium
Sullivan Point	Negligible/Medium	Low/Medium	Intermediate/High	Low/medium	Intermediate/Medium
DRMO Storage Yard	Negligible/Medium	Low/Medium	(2)	(2)	(2)
Dry Docks	Negligible/Medium	Low/Medium	Intermediate/High	Low/Medium	(2)
Back Channel	Negligible/Medium	Low/Medium	Intermediate/High	Intermediate/Medium	Low/Medium
Jamaica Cove	Negligible/Medium	Low/Medium	Negligible/High	Low/Medium	Low/Medium

- 1 The magnitude of the risk is based on the evidence of effect and exposure to the assessment community. The confidence in the conclusions is based on the reliability, concurrence, and magnitude of the data used to assess the risk. The avian assessment community was evaluated for Portsmouth Harbor as a whole. The risk assessment conclusion for the avian assessment community was negligible risk with medium confidence. See Section 7.0 of the Revised Draft Final Estuarine Ecological Risk Assessment (NCCOSC, 1997) for more detailed discussion of the evaluation of risks.
- 2 The assessment community was not present at the AOC; i.e., sediment, eelgrass, and/or salt marsh habitats were not present

Table 2-2 was adapted from Tables 7-4 to 7-9 from the Revised Draft Final Estuarine Ecological Risk Assessment (NCCOSC, 1997).

TABLE 2-3

**SUMMARY OF ECOLOGICAL RISKS ASSOCIATED WITH SURFACE WATER AND
SEDIMENT EXPOSURE IN THE AOCs⁽¹⁾
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**

Area of Concern	Surface Water		Sediment		Chemicals of Potential Concern
	Magnitude	Confidence	Magnitude	Confidence	
Clark Cove	Low	Medium	Low	High	Metals and tPCB
Sullivan Point	Low	Medium	Intermediate	High	Metals and PAHs
DRMO Storage Yard	Negligible	Medium	⁽²⁾	--	Metals
Dry Docks	Low	Medium	Intermediate	High	Metals, tPCB, and PAHs
Back Channel	Low	Medium	Intermediate	High	Metals and PAHs
Jamaica Cove	Low	Medium	Low	High	Metals

Metals include chromium, copper, lead, mercury, nickel, and zinc.

tPCBs total polychlorinated biphenyls (PCBs)

PAHs Polyaromatic hydrocarbons; includes anthracene, fluorene, phenanthrene, and pyrene

- 1 The magnitude of the risk is based on the likely route of exposure to the assessment communities and the magnitude of risk observed. Confidence is based on the agreement and confidence associated with the conclusions for each of the assessment communities.
- 2 Sediment was not present at the DRMO Storage Yard AOC.

Table 2-3 was adapted from Tables 7-14, 7-24, and 8-1 of the Revised Draft Final Estuarine Ecological Risk Assessment (NCCOSC, 1997).

The HHRA identified current uses of the Piscataqua River including commercial and recreational fishing and lobstering. Recreational fish include striped bass, bluefish, salmon, eels, cod, shad, smelt, river herring, and flounder (McLaren/Hart, 1994a).

Potential exposure points and routes identified for human health include dermal contact with and ingestion of surface water and sediment, and ingestion of biota (including lobster tail, whole lobster [tail plus tomalley], mussels, and flounder fillet). Recreational and subsistence fishing exposure risks were calculated for the exposure routes provided in Table 2-4. This table provides a summary of the results of the HHRA. Based on the results of the risk assessment, risks for ingestion of sediment, dermal contact with sediment, and ingestion of surface water were less than regulatory guidelines (U.S. EPA target risk range [10^{-6} to 10^{-4}] and MEDEP maximum incremental risk guidelines [10^{-5}] for carcinogenic risks, and a Hazard Index of 1.0 for noncarcinogenic risks). Risks from ingestion of seafood were found to exceed regulatory guidelines. Chemicals which contributed to the risks for seafood ingestion include metals, PAHs, PCBs, and pesticides (McLaren/Hart, 1994a). However, the risk assessment could not differentiate whether the chemicals that cause the risk were from PNS sources or from other sources within the lower Piscataqua River. Also, the concentration of chemicals detected in seafood in the lower Piscataqua River were found to be equal to or lower than other areas of the coastal waters of Maine. Therefore, addressing offshore human health risks from ingested seafood as part of this interim action would not be feasible. Currently the shellfish beds are closed because of biological contamination in the Piscataqua River from other sources. There are also other seafood advisories in effect throughout the coastal waters of Maine. The State of Maine has determined that no additional health advisories for the area are necessary at this time. However, in the future, the U.S. EPA or the State of Maine may require the Navy to address metals contamination in mussels around the Shipyard as part of an overall effort (by all of the contributors) to reduce contamination in the river.

2.6.3 Phase I/Phase II Off-shore Data Comparative Analysis Report

The Phase I/Phase II Offshore Data Comparative Analysis Report (TtNUS, 1998) was prepared to determine whether the HHRA (McLaren/Hart, 1994a) for PNS, which includes Phase I data only, should be updated to include Phase II data. To determine the need for updating the Offshore HHRA, Phase I and Phase II data were compared, and the impacts to the risk assessment results, based on the data comparison, were evaluated. Phase I and Phase II data from lower Piscataqua River samples for seafood (lobster, mussels, and flounder) were evaluated in the data comparative analysis. The evaluation compared Phase I average and maximum concentrations with Phase II average and maximum concentrations. The data comparative analysis indicated that although most analytes decreased in concentration from Phase I to Phase II, several analytes either increased in concentration or were not

TABLE 2-4

**ESTIMATED OFFSHORE HUMAN HEALTH RISKS(1)
PORTSMOUTH NAVAL SHIPYARD, KITTERY, MAINE**

Exposure Route	Recreational Exposure		Subsistence Fishing	
	Maximum	Mean	Maximum	Meas

HAZARD INDEX

Consumption of Lobster Tail Flesh	14.3	7.6	34.9	18.6
Consumption of Whole Lobster	17.3	8.96	42.2	21.9
Consumption of Mussels	6.52	2.58	15.9	6.3
Consumption of Flounder Fillet	4.59	3.78	11.2	9.25
Ingestion of Surface Water	<0.0001	<0.0001	NC	NC
Ingestion of Sediment	0.005	0.002	NC	NC
Dermal Contact with Sediment	<0.0001	<0.0001	NC	NC
Combined Pathway - Ingestion of Mussels, Dermal Contact with Sediment	6.52	2.58	15.9	6.3
Combined Pathway - Ingestion of Surface Water and Sediment and Dermal Contact with Sediment	0.005	0.002	NC	NC
Combined Pathway - Ingestion of Sediment, Surface Water, Lobster Tail, and Dermal Contact with Sediment	14.3	7.6	NC	NC

INCREMENTAL CANCER RISK

Consumption of Lobster Tail Flesh	4.14×10^{-3}	1.81×10^{-3}	1.01×10^{-2}	4.41×10^{-3}
Consumption of Whole Lobster	5.19×10^{-3}	2.31×10^{-3}	1.27×10^{-2}	5.67×10^{-3}
Consumption of Mussels	1.44×10^{-3}	5.49×10^{-4}	3.51×10^{-3}	1.34×10^{-3}
Consumption of Flounder Fillet	1.18×10^{-3}	9.03×10^{-4}	2.87×10^{-3}	2.21×10^{-3}
Ingestion of Surface Water	(2)	(2)	NC	NC
Ingestion of Sediment	1.33×10^{-6}	3.76×10^{-7}	NC	NC
Dermal Contact with Sediment	1.85×10^{-8}	3.54×10^{-6}	NC	NC
Combined Pathway - Ingestion of Mussels, Dermal Contact with Sediment	1.44×10^{-3}	5.49×10^{-4}	3.51×10^{-3}	1.34×10^{-3}
Combined Pathway - Ingestion of Surface Water and Sediment and Dermal Contact with Sediment	1.35×10^{-6}	3.80×10^{-7}	NC	NC
Combined Pathway - Ingestion of Sediment, Surface Water, Lobster Tail, and Dermal Contact with Sediment	4.14×10^{-3}	1.81×10^{-3}	NC	NC

NC - Not calculated in the offshore human health risk assessment.

- Offshore human health risks were taken from the Final Human Health Risk Assessment for Offshore Media, Portsmouth Naval Shipyard (McLaren/Hart, 1994a).
- Carcinogenic risk was not calculated for ingestion of surface water since slope factors for oral exposure were not available for the chemicals of concern.

analyzed in Phase I but were detected in Phase II. These analytes were further evaluated for any impacts to the results of the HHRA. Based on this evaluation, several additional contaminants of potential concern for human health were identified. These include methyl mercury, manganese, and dibenzo(a,h)anthracene.

2.7 IDENTIFICATION OF THE INTERIM REMEDY

The identification of the potential interim remedies for OU4 was conducted during meetings in March and May, 1998 between the Navy, U.S. EPA, MEDEP, Natural Resources Trustees (NOAA and Department of Interior [DOI] as represented by U.S. Fish and Wildlife Service), and the TAG consultant. The meetings focussed on the results of the offshore investigations, potential remediation objectives and general response actions (classes of remedial actions) to meet those objectives for OU4, and potential interim actions for OU4.

The general response actions identified include No Action, Institutional Controls, Containment, Removal, Disposal, In-situ Treatment, and Ex-situ Treatment. Specific technologies for the general response actions that could be implemented as interim actions for OU4 were identified. The following interim remedies were considered for OU4:

- Monitoring
- Eelgrass Restoration
- Erosion Controls

Offshore monitoring was evaluated as an interim remedy to fulfill certain data requirements and uncertainties in current conditions. The risks identified for OU4 are based on data collected from sampling that was completed in 1993 and earlier. From 1993 until the present time, there have been onshore remedial actions and additional onshore investigations, and the effects of these remedial actions on OU4 have not been comprehensively evaluated. Moreover, changes in contaminant levels in OU4 from natural attenuation or discharges from other sources have not been verified using a current round of sampling. Therefore, offshore monitoring is required to determine the current concentrations of contaminants of concern in the offshore. Offshore monitoring also is required as a principal component of any further remedial action that may be considered for OU4 or the onshore OUs to verify the efficacy or impacts of the remedial actions on the offshore.

The other interim remedies considered (eelgrass restoration and erosion controls) were not selected because sufficient information was not available to implement these remedies at this time and they may not be consistent with the final action for OU4. These remedies will be considered as part of the evaluation and development of the final remedy for OU4 (as part of the feasibility study for OU4)

2.8 SELECTED INTERIM REMEDY

The selected interim remedy consists of offshore monitoring of environmental media (e.g., sediment) in the areas offshore of PNS that were potentially affected by onshore IRP sites. Offshore environmental media will be monitored to determine whether over the course of interim monitoring current and future concentrations of chemicals of concern (COCs) in the offshore AOCs are at acceptable levels (interim Remediation Goals [IRGs]). In addition, interim monitoring will be used to meet the following objectives; (1) provide information on the current condition of the offshore AOCs; (2) provide information to support the identification and selection of any removal action, any additional interim action, or a final remedy; (3) be consistent with any final remedial action; and (4) provide a basis for any monitoring that may be incorporated as part of the final remedy. Interim offshore monitoring will be conducted in accordance with a final monitoring plan that will specify the media, location, analytes, procedures, and frequency of sampling. The interim monitoring plan will be reviewed by the regulators, Federal and State National Resource Trustees (NOAA, DOI as represented by U.S. Fish and Wildlife Service, Maine Department of Marine Resources, and State of New Hampshire Fish and Game Department), and the RAB. The interim monitoring plan and subsequent revisions of the monitoring plan will be finalized in accordance with the FFA once that agreement takes effect. These revisions shall include, but not be limited to; addition or deletion of analytes, addition or deletion of monitoring locations, change in frequency of monitoring, and addition or deletion of media to be sampled. The interim monitoring plan shall be designed to address both the intertidal and subtidal sediments around Seavey Island.

Also, within 90 days after signature of this Interim ROD, the Navy will submit a schedule and a description of the evaluation to be conducted by the Navy of the four rounds of seep/sediment data collected between December 1996 and November 1997. The report shall include the Navy's recommendation of whether pesticides are potential COCs for OU4. The report will be finalized in accordance with the FFA once that agreement takes effect.

During the interim remedy, current environmental conditions in the offshore AOCs will be determined by comparing the concentrations of COCs in site media with IRGs that will be developed as part of the final monitoring plan. The interim remediation goals will be concentration-based levels that will be developed to meet the following interim remedial action objectives (RAOs):

- Protect pelagic, epibenthic, eelgrass, and salt marsh communities by identification of exposure to COCs at unacceptable levels in the estuarine waters of the PNS offshore AOCs.
- Protect epibenthic, benthic, eelgrass, and salt marsh communities by identification of exposure to COCs at unacceptable levels in the sediment of the PNS offshore AOCs.

The COCs currently identified for OU4 include metals, PCBs, and PAHs. However, the Navy recognizes MEDEP's concern that 4,4'-DDT (a pesticide) may also be a site related COC for OU4 and has agreed to include pesticides (aldrin, hexachlorobenzene, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT) as analytes in the interim offshore monitoring program at all monitoring stations and reference stations. The Navy also agrees to sample for dioxins in the vicinity of Clark Cove, DRMO Storage Yard, Sullivan Point, Dry Docks 1 and 2, and the Reference Stations.

2.9 ANALYSIS OF INTERIM REMEDY

Overall Protection of Human Health and Environment: Interim offshore monitoring would contribute to providing overall protection of human health and environment until a final remedy is selected by providing data to assess whether chemical concentrations in the environment are at or have decreased to acceptable levels and whether additional action is necessary to attain acceptable levels. Interim monitoring would not provide overall protection of human health and the environment through reduction of mobility, toxicity, and/or volume of chemicals in the environment.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs): Interim monitoring would meet Federal and State ARARs related to interim monitoring. IRGs will be developed based on the following chemicals-specific ARARs and To-Be-Considered criteria (TBCs), as appropriate:

- Federal Clean Water Act Ambient Water Quality Criteria (AWQCs) that are relevant and appropriate for protection of freshwater and saltwater aquatic life; U.S. Food and Drug Administration Action Levels for fish and shellfish consumption (TBC); U.S EPA Proposed Sediment Quality Criteria for protection of benthic organisms (TBC); NOAA's Incidence of Adverse Biological Effects within Ranges of Chemical Concentration in Marine and Estuarine Sediments (TBC); and NOANs National Status and Trends Program Approach Informal Guidelines Mussel Watch Data (TBC).
- Maine Surface Water Toxics Control Program regulations that are relevant and appropriate for ambient water quality criteria for toxic pollutants.

Monitoring activities that will be conducted as the interim remedial action will comply with the following action-specific and location-specific ARARs and TBCs:

- Executive Order 11990 - Protection of Wetlands, which is applicable to the minimization of destruction, loss or degradation of wetlands and to preserve and enhance natural and beneficial values of wetlands; Coastal Zone Management Act of 1996 that is applicable to the preservation and protection of coastal zone areas; and Fish and Wildlife Coordination Act and Endangered Species Act

that are relevant and appropriate for the protection of other natural resources such as fisheries, endangered species or threatened species and their critical habitats.

- Maine Water Classification Program regulations that is relevant and appropriate for water quality designation; Maine Regulations Relating to Sampling Procedures and Analytical Procedures that are relevant and appropriate for monitoring activities, Maine Natural Resources Protection Act Permit by Rule Standards that is relevant and appropriate and Maine Wetland Protection Rules that are applicable to prevent an unreasonable impact on wetlands; Maine Endangered Species Act that is relevant and appropriate to protection of endangered species; and Maine Significant Wildlife Habitat Rules that is relevant and appropriate for the protection of wildlife habitat.

ARARs related to interim monitoring are provided in Appendix C.

Long-term Effectiveness and Permanence: Interim monitoring would contribute to providing long-term protection of human health and the environment by providing data to assess whether chemical concentrations are at or have decreased to acceptable levels. However, additional action may be necessary if chemical concentrations do not attain acceptable levels in the long term.

Reduction of Toxicity, Mobility and Volume through Treatment: Interim monitoring would not achieve any reduction of toxicity, mobility, or volume through treatment. Interim monitoring would, however, detect any changes in chemical concentrations.

Short-term Effectiveness: Interim monitoring would be conducted as part of an approved monitoring plan. The monitoring plan would describe the activities to be conducted and the method for conducting the monitoring so no short-term risks to the community, workers, or the environment would occur during implementation of the interim action.

Implementability: Interim monitoring is readily implementable. The materials and services necessary for interim monitoring (sample collection and laboratory analysis) are readily available.

Cost: Costs for monitoring are generally low compared with removal, disposal, and treatment actions. The cost for monitoring depends on the scope and components of the monitoring program (e.g., number of samples, type of media, list of analytes, and frequency of sampling). Annual costs for interim offshore monitoring at OU4 are expected to range between \$100,000 to \$500,000.

State Acceptance: The MEDEP concurs with the selected interim remedy (see Appendix A).

Community Acceptance: A public meeting was held on November 4, 1998 where the interim remedy was presented, the transcripts of which are presented in Appendix B. Verbal comments received during the meeting are addressed in the Responsiveness Summary in Section 3.0. In addition, written comments received during the public comment period are presented in Appendix B and addressed in the Responsiveness Summary.

2.10 STATUTORY DETERMINATIONS

Statutory requirements of CERCLA Section 121 include: (1) be protective of human health and the environment; (2) comply with ARARs; (3) be cost-effective; (4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and (5) satisfy the preference for treatment that reduces toxicity, mobility, or volume as a principal element, or provide an explanation as to why this preference is not satisfied. The following provides a discussion of how the interim remedy for OU4 meets the statutory requirements, as appropriate.

This interim action is protective of human health and the environment in the short-term and is intended to provide adequate means to take protective measures until the final ROD is signed; complies with Federal and State ARARs for this limited-scope action; and is cost effective. This action is interim and is not intended to use permanent solutions and alternative treatment (or resource recovery) technologies. Because this action does not constitute the final remedy for OU4, the statutory preference for remedies that use treatment as a principal element to reduce the toxicity, mobility, or volume of contaminated media is not addressed here but will be addressed by the final remedy. Subsequent actions are planned to address fully the potential threats posed by the conditions at OU4. Because this is an interim action ROD, review of site conditions and implementation of this interim remedy will be ongoing as the Navy continues to develop final remedial alternatives for OU4.

2.11 EXPLANATION OF SIGNIFICANT CHANGES

To fulfill the requirements of CERCLA Section 117(b), this Interim ROD must document and discuss the reasons for significant changes made to the selected remedy from the time the Interim Proposed Plan is released for public comment to the final selection of the remedy. The Interim Proposed Plan was released for public comment on October 28, 1998. The Interim Proposed Plan identified interim offshore monitoring as the Navy's proposed interim action for OU4. All written and verbal comments submitted during the public comment period were reviewed. Upon review of these comments, no significant changes to the remedy, as identified in the Interim Proposed Plan, were necessary.

3.0 RESPONSIVENESS SUMMARY

The Responsiveness Summary is a concise and complete summary of significant comments received from the public and includes responses to these comments. The Responsiveness Summary was prepared after the public comment period (which ended on November 30, 1998) in accordance with guidance in "Community Relations in Superfund: A Handbook" (OSWER Directive 9230 0-313, January 1992). The responsiveness summary provides the decision-maker with information about the views of the community. It also documents how the agency has considered public comments during the decision-making process and provides answers to major comments. The Responsiveness Summary consists of three sections, as follows.

3.1 OVERVIEW

The Interim Proposed Remedial Action Plan as presented to the public identified monitoring as the interim remedy for Operable Unit 4 (OU4), Portsmouth Naval Shipyard (PNS), Kittery, Maine. The interim remedy consists of monitoring of environmental media (e.g., sediment) in the areas offshore of PNS that were potentially affected by onshore Installation Restoration Program (IRP) sites. Offshore environmental media will be monitored to determine whether over the course of interim monitoring current and future concentrations of chemical of concern (COC) in the offshore areas identified in this Interim ROD are at acceptable levels (Interim Remediation Goals [IRGs]). In addition, interim monitoring will also be used to meet the following objectives: (1) provide information on the current condition of the offshore areas; (2) provide information to support the identification and selection of any removal action, any additional interim action, or a final remedy; (3) be consistent with any final remedial action; and (4) provide a basis for any monitoring that may be incorporated as part of the final remedy. Interim action decisions that will be made based on the environmental data collected, including IRGs, will also be specified in the final plan.

Several comments were received during the public comment period. Two comments were received supporting conducting interim monitoring. No comments were received against conducting interim monitoring for OU4.

3.2 BACKGROUND ON COMMUNITY INVOLVEMENT

The public comment period for the proposed interim action for OU4 began on October 28, 1998. A public meeting was held on November 4, 1998 at Days Inn, in Kittery, Maine, to accept verbal comments on the proposed interim action. No significant comments that required a revision to the proposed interim remedy were received at the public meeting or during the public comment period that ended on November 30, 1998. Public concerns expressed during the public comment period related to the format of the public

1998. Public concerns expressed during the public comment period related to the format of the public meeting and public participation during the meeting. Additional comments were related to the content of the monitoring program. These comments are discussed in Section 3.3.

3.3 SUMMARY OF COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND NAVY RESPONSES

During the public comment period, verbal comments were received from the public at the public meeting on November 4, 1998 and written comments were received from the Seacoast Anti-Pollution League (SAPL). The transcript for the formal portion of the public meeting (where verbal comments were heard) is included as Appendix B. In addition, written comments received during the public comment period (correspondence from Lepage Environmental Services, Technical Advisory Grant [TAG] consultant to SAPL, to Portsmouth Naval Shipyard, dated November 29, 1998) are included in Appendix B. The public comments have been separated into three categories: comments on the interim remedy and the proposed remedial action plan; comments on the public meeting and public participation in the meeting, and comments on the interim monitoring program. A summary of the comments with responses is provided below.

Comments on the interim remedy and proposed remedial action plan

Comment: The Navy needs to clarify that OU4 consists of Site 5 and Site 26 as well as the offshore areas. Also clarification should be provided that Site 5 did not only have a "potential" impact to the offshore, but had identified impacts (contamination detected in offshore samples)

Response: OU4 includes areas offshore of PNS that were potentially affected by PNS onshore IRP sites. Site 5 (industrial Waste Outfalls) and Site 26 (Portable Oil/Water Tanks) were included only in OU4 because these two sites only had offshore impacts and did not have onshore impacts. Sites 5 and Site 26 are located in the Dry Docks AOC and are no longer a source of contamination to the offshore. Site 5 is no longer in operation. The Navy has proposed removing Site 26 from the CERCLA program because this site is excluded from CERCLA (because of the petroleum exclusion) and is currently regulated under another program (RCRA). Any impacts Sites 5 and 26 may have had on the offshore will be addressed by remedial actions in the Dry Docks AOC. The text in the Interim ROD provides the information provided in this response.

Comment: Spruce Creek should be included in the OU4 area.

Response: Based on offshore studies conducted to date, the Navy believes PNS is not a source of contamination in Spruce Creek. Beyond determining whether the Navy is a source to Spruce Creek, the

IRP is not funded to determine the source of contamination in Spruce Creek. Therefore, the Navy will not include Spruce Creek as part of OU4 for the interim monitoring.

Comment: The weight-of-evidence process used to develop ecological risk appears to be biased toward reaching a conclusion of lower risk.

Response: The weight-of-evidence process does not bias results toward conclusions of lower risk. In the weight-of-evidence process numerous independent lines of evidence of effects and exposure to the assessment endpoints were evaluated to determine risks to the assessment endpoints. Some measures of effects and exposure were found to provide more conclusive results than other measures. The more conclusive results the measure provided, the higher the weight that measure was given in the calculation of risks. For each assessment endpoint, the results of the various measures were added together to determine the risk for the assessment endpoint. Measures that had a low weight would affect the risk conclusions less than measures with a medium or high weight. However, because the risk conclusions are based on numerous measures, the risks tend to point toward the conclusions that the majority of measures indicate. Therefore, if the majority of the measures indicate intermediate risk with a medium weight, although one measure indicates low risk with a high weight, the risk conclusion for the assessment endpoint tends toward intermediate risk.

Regardless of the results of the ecological risk assessment for each AOC, the interim monitoring program will include monitoring of all AOCs. Interim remediation goals will be developed to identify acceptable levels of contaminants in the offshore that are protective of sensitive aquatic species. These levels will be used to determine whether contaminant concentrations in the offshore are at acceptable levels or additional remedial action is necessary.

Comment: Reports should provide the public with a sense of the time line and how much money has been spent.

Response: The Navy and the Department of Defense publish annual reports, which provide a summary of the work performed, the amount spent, and the projected cost to complete for each installation. As part of a FS, remedial alternatives for a site/OU are identified and evaluated. As part of the evaluation for the site/OU, the length of time to remediate and the costs for each alternative are estimated. The FS for OU4 will include this information for the alternatives identified and evaluated for the selection of the final remedy for OU4.

Comment: It is irrelevant whether conditions are worse elsewhere in the state of Maine if risks from eating seafood exceed regulatory guidelines. The interim action should focus on conditions in the Piscataqua River and should state problems clearly without referring to other areas that are worse.

Response: It would not be feasible to address human health risk as part of this interim action. Because there are various sources of contamination in the Piscataqua River besides PNS, the Navy cannot address contamination throughout the Piscataqua River. Although the human health risk assessment indicated that the risks from eating seafood around the Shipyard exceeded regulatory guidelines, the human health risk assessment could not differentiate whether the chemicals that cause the risk were from PNS sources or from other sources in the lower Piscataqua River. In the future, the U.S. EPA or the State of Maine may require the Navy to address metals contamination in mussels around the shipyard as part of an overall effort (by all of the contributors) to reduce contamination in the river.

Comments on the format of the public meeting and public participation

Several members of the public express concerns with the format of the public meeting and the Navy's efforts to encourage public participation at the public meeting. The comments were as follows:

Comment: Recording of formal comments at the end of the meeting without Navy response and not recording the entire public meeting inhibited public participation. It was difficult to restate positions or ask questions at the end of the meeting rather than during the informal presentation of the proposed interim action. Also this format was different from that indicated in the Interim Proposed Remedial Action Plan.

Response: The Navy selected the format for the meeting to provide sufficient questions and answers during the presentation of the proposed interim action so that questions and comments not related to the selection of the proposed interim action could be sufficiently answered before recording formal comments. This way formal comments could be focused on the selection of the proposed interim action. The format for the meeting was determined after the Interim Proposed Remedial Action Plan was made available to the public. While the Navy answered questions and comments during the informal portion of the November 4, 1998 public meeting, the Navy did not respond to comments during the formal portion of the meeting when comments were transcribed. The Navy plans to discuss the format for public meetings for future proposed actions at a Restoration Advisory Board (RAB) meeting to determine an acceptable format. All RAB meetings are open to the public and are announced in the newspaper (*The Portsmouth Herald and Foster's Daily Democrat*) before the RAB meeting.

Comment: The Navy should make more of an effort to involve the public in the public meeting, including advertising and public relations articles/press releases. In addition, the Navy should send a separate mailing to RAB members detailing the event at least a week prior.

Response: The Navy provided an announcement in on October 28, 1998 in *The Portsmouth Herald* and *Foster's Daily Democrat* for the availability of the proposed plan and the schedule for the public meeting the week before the meeting. In addition, the proposed plan was sent to the PNS mailing list (which includes approximately 40 names) at the same time the proposed plan was mailed to the regulators and RAB members. The front page of the proposed plan includes a highlighted announcement of the public meeting. The Navy plans to include on the agenda of a RAB meeting a discussion of ways the Navy and the RAB members can encourage more public participation.

Comment: Scheduling the public meeting for the day after Election Day did not enhance public participation.

Response: The public comment period for the interim proposed remedy for OU4 began on October 28, 1998 and ended on November 30, 1998. To hold a public presentation/hearing for the proposed remedy early in the public comment period without interfering with the RAB meeting scheduled for November 19, 1998, the first week of November was identified as the best time to hold the public meeting. As provided in the response to the previous comment, the Navy plans to include on the agenda of a RAB meeting a discussion of ways the Navy and the RAB members can encourage more public participation.

Comments on the interim monitoring program

Several comments were received on the content of the interim offshore monitoring program. The program is currently being developed as part of the development of the interim offshore monitoring plan.

Comment: The University of New Hampshire has performed independent research that has identified specific contaminants, notably lead, coming from the Shipyard versus from other sources. The results of this research and the method used by the University should be incorporated in the offshore monitoring program.

Response: The Navy is currently evaluating the results of the research and evaluating whether the method is appropriate as part of an offshore investigation.

Comment: How and when will the Navy address research needs to reduce uncertainty in the results of the ecological risk assessment (identified in Table 8-2 of the Revised Draft Final Estuarine Ecological Risk Assessment (EERA), NCCOSC, 1997)? Also how will the 1996/1997 seep and sediment data (Rounds 7 through 10) and new monitoring data be evaluated by the Navy?

Response: The Navy is currently developing the interim offshore monitoring program. However, the Navy does not plan to conduct the monitoring and research needs identified in the Revised Draft Final Estuarine Ecological Risk Assessment (NCCOSC, 1997) at the current time. The purpose of the studies identified in the EERA is to increase confidence and reduce uncertainty associated with the results of the risk assessment. The table represents a comprehensive listing of possible studies for the evaluation of risks. The Navy does not plan to conduct additional risk assessment studies, but accepts the results of the risk assessment and is now moving into the FS stage. The proposed sampling and analysis program for interim offshore monitoring will address measures necessary to monitor OU4 in the interim of preparation of the FS and selection and implementation of a final action for OU4. The Navy will prepare a separate report to summarize the 1996/1997 seep and sediment data (Rounds 7 through 10). The methods of evaluation for the data collected as part of the interim monitoring will be addressed in the monitoring plan.

Comment: When will the Navy provide responses to SAPL comments on the Proposed Sampling and Analysis Program for Interim Offshore Monitoring, July 1998 (presented at the August 20, 1998 technical meeting)?

Response: Responses to U.S. EPA, MEDEP, and SAPL comments on the Proposed Sampling and Analysis Program for Interim Offshore Monitoring, July 1998 will be included as an appendix to the draft Interim Offshore Monitoring Plan Minutes from the August 20, 1998 technical meeting were submitted October 23, 1998.

Comment: How will the Navy evaluate resources and potential risk posed to human health once the fish advisories and shellfish closures are lifted at some time in the future? The monitoring program should be designed to address human health risk and should be used to evaluate human health risk.

Response: The Navy's IRP will evaluate resources and potential risks posed to human health according to the requirements of CERCLA. Although the interim monitoring program will not be developed to address human health risks, the data collected as part of the interim monitoring program could be used to evaluate human health risk, if required.

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APPENDIX A

**LETTER OF CONCURRENCE FROM
MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION**



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ANGUS S. KING, JR.
GOVERNOR

EDWARD O. SULLIVAN
COMMISSIONER

May 3, 1999

V. T. Williams
Captain, USN
Commander,
Portsmouth Naval Shipyard
Kittery, Maine

Re: Letter of Concurrence, Interim Record of Decision for Operable Unit 4, Portsmouth Naval Shipyard, Kittery, Maine

Dear Capt. Williams:

The Maine Department of Environmental Protection (MEDEP) has reviewed the Draft Final Interim Record of Decision (IROD) for Operable Unit 4, dated March 1999.

Based on that review the Maine Department of Environmental Protection concurs with the selected interim remedial action which consists of monitoring offshore areas described in the IROD for metals (chromium, copper, lead, mercury, nickel, and zinc), total polychlorinated biphenyls (tPCB), polyaromatic hydrocarbons (anthracene, fluorene, phenanthrene, and pyrene), pestirides (aldrin, hexachlorobenzene, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT), and dioxins. A long-term monitoring plan will be developed and protective levels will be developed for contaminants of concern. The interim remedial action is outlined below:

- Monitor offshore media in the areas offshore (Areas of Concern or AOCs) of PNS that were potentially affected by onshore IRP sites to determine whether concentrations of Chemicals of Concern in the offshore AOCs are at acceptable levels.

This concurrence is based upon the State's understanding that:

- Interim offshore monitoring will be conducted in accordance with an approved monitoring plan that will specify the media, location, analytes, procedures, and frequency of sampling,
- The MEDEP will participate in the review of the Interim Monitoring Plan for OU4 to the extent provided for in CERCLA,
- The Contaminants of Concern include metals (chromium, copper, lead, mercury, nickel, and zinc), total polychlorinated biphenyls (tPCB), and polyaromatic hydrocarbons (anthracene, fluorene, phenanthrene, and pyrene),

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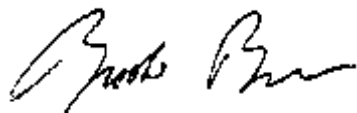
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- The Navy will also monitor for the pesticides aldrin, hexachlorobenzene, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT at all monitoring stations and reference stations. In addition, the Navy will develop interim remedial goals for DDT and its congeners.
- The Navy will monitor for dioxins in the vicinity of the DRMO, Clark's Cove, Sullivan's Point, Dry Docks 1 and 2, and the reference stations,
- During the interim remedy, current environmental conditions in the offshore AOCs will be determined by comparing the concentrations of Contaminants of Concern and other analytes in site media with interim remediation goals that will be developed to meet the interim remedial action objectives,
- The offshore AOCs to sampled include the Back Channel AOC, Jamaica Cove AOC, Clark Cove AOC, Sullivan Point AOC, DRMO Storage Yard AOC, and Dry Docks AOC,
- The offshore AOCs at PNS include intertidal mudflat, pelagic, eelgrass, salt marsh, channel bottom/subtidal, and rocky intertidal habitats,
- The offshore media to be sampled consist of sediment, juvenile lobster (*Homarus americanus*), and mussels (*Mytilus edulis*),
- Several interim offshore monitoring stations will be located near seep locations in order to evaluate potential seep impacts to the offshore.

Please note that the State's concurrence with the interim remedial action is conditional on our acceptance of the interim monitoring plan. The MEDEP looks forward to working with Navy and EPA to resolve the environmental problems posed by the Shipyard. If you need additional information do not hesitate to call myself or members of my staff.

Sincerely,



Brooke Barnes
Acting Commissioner
Maine Department of Environmental Protection

pc:

Iver McLeod, MEDEP
Denise Messier, MEDEP
Mark Hyland, MEDEP
Larry Dearborn, MEDEP
Katie Zeeman, MEDEP
Fred Evans, NorthDiv
Meghan Cassidy, USEPA
Marty Raymond, PNS
Debbie Cohen, Tetra-Tech NUS
Linda Klink, Tetra-Tech NUS
Ken Finkelstein, NOAA
Ken Munney, USFWS

Jeff Clifford, RAB
Doug Bogen, RAB
Don Card, RAB
Michele Dionne, RAB
Mary Marshall, RAB
Phil McCarthy, RAB
Jack McKenna, RAB
Onil Roy, RAB
Roger Wells, RAB
Mary Menconi, RAB
Peter Van der Mark, TAG Representative
Carolyn Lepage, TAG Advisor



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ANGUS S. KING, JR.
GOVERNOR

EDWARD O. SULLIVAN
COMMISSIONER

May 3, 1999

V. T. Williams
Captain, USN
Commander,
Portsmouth Naval Shipyard
Kittery, Maine

Re: Correction to Letter of Concurrence, Interim Record of Decision for Operable Unit 4, Portsmouth Naval Shipyard, Kittery, Maine

Dear Capt. Williams:

A wording error was made in the Maine Department of Environmental Protection's (MEDEP) May 3, 1999 Concurrence Letter for the Interim Record of Decision (IROD) for Operable Unit 4.

That letter stated, in part,

"In addition, the Navy will develop interim remedial goals for DDT and its congeners."

This sentence should be changed to,

In addition, the Navy will develop ~~interim~~ preliminary remedial goals for DDT and its congeners."

If you need additional information do not hesitate to call myself or members of my staff.

Sincerely,

Brooke Barnes
Acting Commissioner
Maine Department of Environmental Protection

pc:

Iver McLeod, MEDEP
Denise Messier, MEDEP
Mark Hyland, MEDEP
Larry Dearborn, MEDEP
Katie Zeeman, MEDEP
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Meghan Cassidy, USEPA
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Roger Wells, RAB
Mary Menconi, RAB
Peter Van der Mark, TAG Representative
Carolyn Lepage, TAG Advisor

APPENDIX B

PUBLIC COMMENTS ON INTERIM ACTION FOR OU4

- B.1 Transcript from the November 4, 1998 Public Meeting**
- B.2 Written Comments from Seacoast Anti-Pollution League
Technical Advisory Grant Consultant, dated November 29,
1998.**

APPENDIX B.1

Transcript from the November 4, 1998 Public Meeting

NAVY'S PROPOSED PLAN FOR INTERIM ACTION AT OPERABLE UNIT 4

Public Hearing in Kittery, Maine

November 4, 1998

This hearing held at the Kittery Days Inn, Route 1 Bypass, Kittery, Maine

LEGAL DEPOSITION SERVICE

PROFESSIONAL AUDIO RECORDING AND TRANSCRIPTION SERVICE

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**56 LOGGING HILL ROAD
03304**

BOW, NEW HAMPSHIRE

603-225-4301 / 888-834-8581

1 MR. PLAISTED: This is the start of
2 our official, formal comment period. I would ask that you
3 state your name and where you're from. And there's a
4 microphone over here. I would also ask you to pick that
5 up and talk into into, reason being, that's how the
6 stenographer's going to get the information clearly. So
7 do we have our first formal comment? Sir?

8 MR. HAMILTON: My name is Bill
9 Hamilton. I'm from Kittery Point, and my first question
10 is, or it's a comment really, and that is I think that the
11 format for recording the public comment only at the formal
12 comment period at the end of the meeting is not a useful
13 or workable format. I believe the entire meeting, and its
14 comments and responses, should be recorded as is spelled
15 out in the Navy's plan which was handed out at the
16 beginning of the meeting, and I have a little difficulty
17 in sort of going through this redundant stage at the end
18 of the meeting. Should I continue with my comments. Or
19 should we pass this on?

20 MR. PLAISTED: Well if you have
21 another comment, go right ahead.

22 MR. HAMILTON: Let's see, I think that
23 the Navy should make more of an effort to involve the
24 public in the public hearings, and we've already discussed

1 that in the informal part of the meeting. I'd like to
2 make that a formal comment, which means that I think the
3 navy should advertise and do some public relations
4 articles about the nature of these public hearings. My
5 third comment is that I think the process, which is
6 referred to as the weight of evidence process. In my
7 thinking, and I haven't really had a chance to receive
8 comment on this, but my thinking is that that weight of
9 evidence process appears to be biased toward reaching a
10 conclusion of lower risk and I would like that to be
11 addressed. And my fourth comment is I would like to see
12 Spruce Creek included in the OU4 area as well because, to
13 me, it seems obvious that the way the estuary works, the
14 way it flushes in and out and the way it goes past Seavey
15 Island, it should be a concern to everyone who lives in
16 the area and I think the data that could be collected
17 would be very useful for people who have doubts about that
18 influence. So those are my comments.

19 MR. PLAISTED: Thank you very much
20 Bill. Anyone else? Any other comments?

21 MR. GOGEN: My name is Doug Bogen.
22 I'm from Portsmouth. I'm the Community Co-Chair of the
23 Restoration Advisory Board for the Shipyard. Just for the
24 record, to restate what I said earlier, I was very

1 concerned that both members of the general public and the
2 members of the RAB didn't get adequate notice of this
3 meeting and I'd particularly like to ask that, in the
4 future, public meetings of this sort, members of the RAB
5 get a separate mailing detailing the event at least a week
6 prior to that. I know that a number of members of the
7 RAB, of course, are very interested in this subject but
8 were not able to make it tonight because of that and only
9 really heard about it today or yesterday. So it is very
10 important that better communication get out. And I think
11 there should be more effort to get out a press release,
12 make a more broader media statement, other than just the
13 required notice that ends up in the back of the paper.
14 And as for as future RAB meetings, I'd certainly like to
15 make sure that this issue does get discussed at the next
16 meeting, or the one after that, and that RAB members that
17 were not able to make it tonight have an opportunity to
18 comment, and certainly the November meeting is within the
19 comment period, so I'm sure we will do that, but I do want
20 to make sure it does get on the agenda there. As far as
21 the specific proposal, I guess one of my main concerns is
22 a comment that Fred Evans make earlier that a part of the
23 attempt here which this monitoring is to be able to
24 differentiate what contamination in the offshore areas are

1 the responsibility of the Shipyard, or came from the
2 Shipyard, the onshore areas versus other potential sources
3 of contamination. And I understand that there has been
4 independent research done, through the University of New
5 Hampshire, that has been able to identify specific
6 contaminants. Notably lead, as coming from the Shipyard
7 versus other sources and that that data has been presented
8 to the Navy in a previous meeting, and I would hope that
9 in the plan that you eventually develop for this that you
10 would find a way to incorporate that research to further
11 that work. If we can identify a specific contaminant
12 that's coming from the Shipyard and we can sample a
13 mussel, for example, or a lobster and find that particular
14 isotope of lead, for example, in that organism, that would
15 be very useful information to have. And I would hope that
16 the navy could pursue that option in this monitoring
17 program. Otherwise, you know, it's pretty much
18 circumstantial. You always have the problem of just
19 guessing that well it's closer to the Shipyard versus
20 further away. I think using this technique the Navy could
21 much more definitively say which sediments are being
22 contaminated, which shellfish, which other organisms are
23 contaminated specifically from the Shipyard and not from
24 some other source in the estuary. So I do hope you will

1 pursue that and I'll leave my comments there.

2 MR. PLAISTED: Thank you Doug. Are
3 there any other comments?

4 MR. HERRIGAN: My name is James
5 Herrigan, H-O-R-R-I-G-A-N, from Portsmouth. I can't not
6 dignify this remark as being formal, it's more of and
7 informal remark because all I know about this study is
8 really what I've heard tonight. I would just like to urge
9 the individuals who are involved in this study to not
10 consider it as an adversarial process between you and the
11 public-at-large. It's important for all of us that you
12 succeed in your monitoring program. And in that regard,
13 I would urge you to not get into a defensive mind set when
14 you perhaps do find some environmental problems. And here
15 I refer to the example that came up here tonight about the
16 fact that the risk from eating seafood exceeded regulatory
17 guidelines which, it seemed to me, you then tried to
18 defend by saying "Well there are conditions worse
19 elsewhere in the State of Maine." As a resident of
20 Portsmouth that strikes me as being totally irrelevant.
21 The study should focus on the conditions in the Piscataqua
22 River Basin. And if you do find similar problems. Where
23 national guidelines of EPA and other bodies are exceeded.
24 I think you should state that and not try to somehow blur

1 the point by referring to other regions where conditions
2 are worse. We're all aware that conditions are worse
3 elsewhere. So other than that I say good luck. I think
4 it's an important study that you're embarking on.

5 MR. PLAISTED: Thank you James.
6 Anyone else have a comment?

7 MR. VANDERMARK: Thanks. My name is
8 Peter Vandermark. I'm from Portsmouth. I'm also the TAG
9 Coordinator for the TAG Grant the SAPL, Seacoast Anti-
10 Pollution League, has. I'm wondering if, in the future,
11 this is something that we as a citizens group get asked by
12 the press, for instance, who say "How long is it taking
13 and how much is it costing" and if there was some way, in
14 your reports, you could give the public a sense of a time
15 line and maybe some sense of what's been spent on what up
16 to when, I think that would give people some perspective
17 on the size of this and the length of time it's going to
18 take

19 MR. PLAISTED: Thank You Peter. Any
20 other comments?

21 MS. LEPAGE: I'm Carolyn Lepage.
22 I'm from Auburn and I'm the Technical Advisor to the
23 Seacoast Anti-Pollution League. My first comment, the
24 April, 1997 Revised Draft Final Ecological Risk Assessment

1 identified research needed to reduce uncertainty in the
2 results of the risk assessment, and it also identified
3 essential monitoring studies. This information is
4 summarized in Table 8-2 in the Ecological Risk Assessment
5 document. That document also outlines, within the text,
6 the additional monitoring and research needs. For
7 example, there's a discussion at the top of page 8-15 for
8 improving estimates of sediment accumulation rates to
9 greatly enhance the ability to evaluate contaminant
10 movement in the estuary. How and when will the Navy
11 address the other essential monitoring and research needs
12 identified in Table 8-2 in the Ecological Risk Assessment
13 document? An additional comment, just ask the Navy to
14 Clarify that OU4 actually consists not just of the
15 offshore areas but also of Site 5, which is the industrial
16 outfalls, and Site 26. I think there may be some
17 confusion if someone refers to the Community Relations
18 Plan and wonders if there's been some kind of change,
19 since the Navy's current proposed plan only mentions the
20 offshore area as OU4. Third comment, the last Ecological
21 Risk assessment and Human health Risk Assessment data was
22 collected in 1993. How will the 1996 and 1997 seep and
23 sediment data, and the new monitoring data, be applied by
24 the Navy? How will the data be evaluated and what will be

1 considered? Fourth comment, given the conclusion the Navy
2 presented tonight that the risks of eating seafood
3 exceeded acceptable levels, that there were fish
4 advisories and shellfish closures in the estuary, if these
5 fish advisories and the shellfish closures are lifted at
6 some time in the future, how will the Navy then evaluate
7 these resources and the potential risks they pose?

8 MR. PLAISTED: Thank you Carolyn. Any
9 other comments? One last time, any other comments? If
10 not, the that concludes this evening's meeting. Thank
11 you.

12 **OFF THE RECORD**

PORTSMOUTH NAVAL SHIPYARD INTERIM ACTION AT OPERABLE UNIT 4

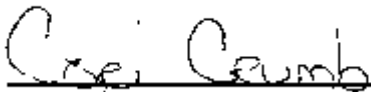
STATE OF NEW HAMPSHIRE

MERRIMACK, SS.

I, Cori Crumb, a Notary Public in the State of New Hampshire, do hereby certify that I transcribed from a tape recording the foregoing **eight (8)** pages and that the same is a true, full and correct transcript of all of the testimony, to the best of my knowledge and belief

I further certify that I am neither attorney nor counsel for, nor related to, or employed by any of the parties to this action, and further that I am not a relative or employee of any attorney or counsel employed in this case, nor am I financially interested in this action.

IN WITNESS WHEREOF, I hereunto set my hand this 11th day of November 1998.

A handwritten signature in cursive script, reading "Cori Crumb", is written over a horizontal line.

Cori Crumb, Audio Transcriber

My Commission Expires July 31, 2001

LEGAL DEPOSITION SERVICE

APPENDIX B.2

**Written Comments from Seacoast Anti-Pollution League Technical Advisory
Grant, dated November 29, 1998**

Lepage Environmental Services, Inc.

P.O. Box 1195 a Auburn • Maine 04211 -1195 • 207-777-1049 • Fax: 207-777-1370

November 29, 1998

Mr. Alan Robinson
Public Affairs Office
Portsmouth Naval Shipyard
Portsmouth, New Hampshire 03804-5000

Subject: Comments on October 1998 *Proposed Plan for Interim Action at Operable Unit 4*

Dear Mr. Robinson:

We are transmitting the following comments concerning the October 1998 *Proposed Plan for Interim Action at Operable Unit 4* on behalf of the Seacoast Anti-Pollution League (SAPL) to supplement oral comments recorded during the November 4, 1998, public meeting:

1. The Seacoast Anti-Pollution League is in favor of conducting additional monitoring in the offshore areas at the Portsmouth Naval Shipyard.
2. SAPL members have a number of concerns with the November 4, 1998, public meeting. The timing of the meeting, scheduled for the evening after election day, did not enhance public participation. Additional publicity would have also encouraged the public attend. While the Navy did post the required public notice in local papers, this notice provides only minimal publicity. A press release (with a suggested appropriate headline) would likely have been beneficial. Here again, the timing of the meeting was such that any newspaper story printed at the meeting was such that any newspaper story printed at the last minute would have been buried in the election results. At a minimum, the Navy should send a specific notice to members of the Restoration Advisory Board.

The format of the meeting also inhibited public participation. No questions or comments were recorded during the first portion of the meeting. Attendees found it difficult to restate their positions or questions in the second half of the meeting, when public comments were recorded.

In addition, the meeting was not conducted according to the format presented in the *proposed Plan*. Page 1 of the *Proposed Plan* states: "To the extent possible, the Navy will respond to your oral comments during the November 4, 1998 public meeting." However, at the beginning of the meeting, the Navy announced that comments and questions would be recorded only after the information presentation was completed, that the Navy would not respond that evening to anything recorded, and would instead provide responses in the Responsiveness Summary in the Interim Record of Decision for OU4. This made for a one-sided exchange.

3. The Site Background Section on page 2 contains that statement that Site 5, the Industrial Waste Outfalls, is considered a site that only had a potential (emphasis added) offshore impact. This statement conflicts with information presented in earlier Navy documents. The April 1997, *Revised Draft Final Estuarine Ecological Risk Assessment* states on page 3-5 that

“Certainly contributing pollutants to the estuary, the industrial waste discharges released heavy metals, and cyanide from plating waste, PCBs, phenolic compounds, oil and grease.
... Marine sediments associated with the outfalls were sampled in 1976. Chemical analysis indicated elevated concentrations of mercury, lead, cadmium; chromium, copper, zinc, PCBs, total cyanide, phenols, and oils and grease. The contaminated sediments were dredged in 1978 and disposed in the JILF [Jamaica Island Landfill]. Sediment sample’s collected directly offshore of the discharge locations in 1991... contained quantifiable level[s] of only Cu, Pb, and Hg [copper, lead, and mercury] above ER-Ls (Effects Range Low).”

Clearly the Industrial Waste Outfalls have had negative historical impacts on the offshore environment. The 1991 sampling results reveal that, even after the removal of contaminated sediments by dredging, significant adverse impacts could still be detected. Furthermore, the dredged sediments were disposed in the JILF, and can continue to act as a source of contamination affecting the offshore areas adjacent to the landfill.

While it is too late to correct the text of the *Proposed Plan*, the *Interim Record of Decision for OU4* must include an accurate characterization of the negative impact Site 5 discharge have had on the offshore environment.

4. As stated in Comment 1 above SAPL agrees with the concept of conducting additional monitoring in offshore areas. However, SAPL can not yet agree with the details of the Navy’s proposed monitoring program as outlined in the July 1998 *Proposed Sampling and Analysis Program, Interim Offshore Monitoring for OU4* and presented at the August 20, 1998, technical meeting. We are still awaiting written responses to our August 14, 1998, comments on the proposed monitoring program. The following comments reiterate a number of SAPL’s concerns presented in the August 14th letter.

The April 1997 *Revised Draft Final Estuarine Ecological Risk Assessment* summarized the research needed to reduce uncertainty in the results of the risk assessment and “essential monitoring studies” in Table 8-2. Additional monitoring and research needs are also outlined in the text of *Risk Assessment* text. The *proposed Sampling and Analysis Program, Interim Offshore Monitoring for OU4* focuses on sediment chemistry and mussel and juvenile lobster tissue, and does not address the other essential monitoring and research needs identified in the *Revised Draft Final Estuarine Ecological Risk Assessment*.

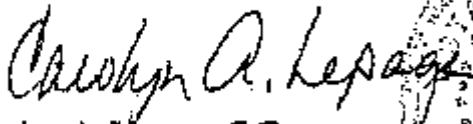
The proposed sampling frequency does not appear to address potential seasonal effects.

It is not clear how the proposed monitoring addresses the lack of eelgrass in Clark Cove, potential impacts of contaminants on salt marshes, potential impacts on winter flounder, and concerns about mobility of inorganic compounds (lead and mercury in particular).

5. The offshore monitoring program should be designed to answer some of the issues and risks identified in the May 1994 *Final Human Health Risk Assessment Report for Off-shore Media*. While the source(s) of some of the contaminants has (have) not been clearly identified, and there are shellfish bed closures and fish advisories currently in effect, the Navy shouldn't wait to start collecting additional data. The Maine Department of Environmental Protection made it clear in their September 30, 1998, letter that the State of Maine intends to eventually open all shellfish beds and that the Navy may need to address contamination around the Shipyard as part of an overall effort (by all contributors) to reduce contamination in the river. Furthermore, the Navy and other parties should not rely on the closures and advisories as completely protecting the public from risks posed by ingesting contaminated seafood. New data generated by the proposed monitoring should be evaluated for human health risks, and the 1994 *Human Health Risk Assessment Report* should be reevaluated using data generated during the proposed monitoring.

If you have any questions regarding the comments above, please give me a call at 207-777-1049

Sincerely,



Carolyn A. Lepage, C.G.
President



cc: Peter Vandermark, Seacoast Anti-Pollution League
Iver McLeod, Department of Environmental Protection
Meghan Cassidy, Environmental Protection Agency
✓ Marty Raymond, Portsmouth Naval Shipyard

APPENDIC C

ARARs FOR INTERIM OFFSHORE MONITORING AT OU4

TABLE C-1

**CHEMICAL-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS, ADVISORIES, AND GUIDANCE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAIN**

Medium or Activity	Requirement	Status	Requirement Synopsis	Evaluation/Action to Be Taken
FEDERAL				
Water	Clean Water Act (CWA); Federal Ambient Water Quality Criteria (AWQC); (33 USC §§1251 et seq, 40 CFR § 122.44; 40 CFR Part 131)	Relevant and appropriate	CWA AWQC are health-based criteria developed for carcinogenic and noncarcinogenic compounds and water quality parameters. AWQC are set at levels that are guidelines for pollutants in surface water. AWQC are available for the protection of human health from exposure to contaminants in drinking water as well as from ingestion of aquatic biota and for the protection of freshwater and saltwater aquatic life.	AWQCs for the protection of freshwater and saltwater aquatic life will be used to develop PRGs, as appropriate
Water	U.S. Food and Drug Administration (FDA) Action Levels (21 U.S.C. §§301 et seq)	TBC	Under Section 408 of the Federal Food, Drug, and Cosmetic Act, FDA action levels are established above which the FDA can take legal action to remove a food product from the market.	FDA action levels for fish and shellfish will be used to develop PRGs, as appropriate
Sediment	EPA Proposed Sediment Quality Criteria, 59 Fed. Reg. 2652 (Jan. 18, 1994)	TBC	These sediment quality criteria for the protection of benthic organisms are proposed for acenaphthene, dieldrin, dieldrin, fluoranthene, and phenanthrene.	These criteria will be used to develop PRGs, as appropriate.
Sediment	National Oceanographic Atmospheric Administration (NOAA) Incidence of Adverse Biological Effects within Ranges of Chemical Concentration in Marine and Estuarine Sediments.	TBC	This document provides chemical concentration effects distributions that describe the observed or predicted chemical concentrations associated with biological effects. Effects range low (ER-L) and effects range median (ER-M) represent the tenth and fiftieth percentile of reported effects.	ER-L and ER-M concentrations will be used to develop PRGs, as appropriate.
Other natural Resources	NOAA National Status and Trends Program Approach, Informal Guidelines Mussel Watch Data (1991).	TBC	Chemical concentrations in blue mussel tissues located in coastal waters of the US are monitored under this program. Data from the program have been compiled to characterize the national distribution of chemical concentration levels. (O'Connor, 1990)	Data will be considered in PRG development as appropriate.
STATE				
Water	Main Surface Water Toxics Control Program (06-096 CMR 530)	Relevant and Appropriate	The regulations implementing this program set Statewide ambient water quality criteria for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface water are identified. Statewide criteria are set at Federal AWQC levels.	Federal AWQCs, which have been adopted as state criteria, will be used to develop PRGs, as appropriate.

TABLE C-2

**LOCATION-SPECIFIC OR RELEVANT AND APPROPRIATE REQUIREMENTS, ADVISORIES, AND GUIDANCE
PORTSMOUTH NAVAL SHIPYARD
KITTER, MAINE
PAGE 1 OF 2**

Medium or Activity	Requirement	Status	Requirement Synopsis	Evaluation/Action to Be Taken
FEDERAL				
Wetlands	Protection of Wetlands – Executive Order 11990 (40 CFR Part 6, Appendix A)	Applicable	Requires Federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance natural and beneficial values of wetlands.	Wetlands are located in various locations around PNS. Monitoring activities will meet the requirements of 11990
Wetlands	Coastal Zone management Act (16 USC 1451 et seq)	Applicable	This act provides for the preservation and protection of coastal zone areas. Coastal zone development must be managed in such a way as to minimize the effects on coastal zone resources. Activities in coastal zone areas must be consistent to the maximum extent practicable with a Federally approved state management program.	Monitoring activities will be in compliance with this act.
Other natural Resources	Fish and Wildlife Coordination Act (16 USC 661 et seq.; 40 CFR § 6.302)	Relevant and Appropriate	This act requires any federal agency proposing to modify a body of water, must consult with the U.S. Fish and Wildlife Service, National marine Fisheries Services, and other related state agencies.	Notification is not required for actions taken on -site at a CERCLA site. However, monitoring activities will be conducted so as to minimize impacts to wetlands.
Other Natural Resources	Endangered Species Act (16 USC 1531 et seq; 50 CFR Parts 200, 402	Relevant and Appropriate	Federal agencies are required to consider the impacts on endangered and threatened species and their critical habitats (listed in 40 CFR Part 17).	No known endangered threatened or protected species or critical habitats are located on the site; however, Clark's Island is used by nesting birds. Monitoring activities will be in compliance with this act.

TABLE C-2

**LOCATION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS, ADVISORIES, AND GUIDANCE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAINE
PAGE 2 OF 2**

Medium or Activity	Requirement	Status	Requirement Synopsis	Evaluation/Action to Be Taken
STATE				
Water	Water Classification Program (38 MRSA §§ 464-470)	Relevant and Appropriate	Establishes a water quality classification system to allow the State to manage its surface waters so as to protect the quality of those waters.	Monitoring activities will be in compliance with this law.
Wetlands	Maine natural Resources Protection Act Permit by Rule Standards (38 MRSA 480-A et seq.; 06-096 CMR 305)	Relevant and Appropriate	These Standards require a permit for any activity conducted in, on, or over any protected natural resource or any activity conducted adjacent to and operated in such a way that material or soil may be washed into any coastal wetland, great pond, river, stream or brook, and some freshwater wetlands.	Monitoring activities will not require a permit, but will comply with the substantive requirements of these standards.
Wetlands	Maine Wetland Protection Rules (06-096 CMR 310)	Applicable	These standards are provided for wetlands protection. Activities that have an unreasonable impact on the wetlands are prohibited.	Monitoring activities will be in compliance with these rules.
Other Natural Resources	maine Endangered Species Act (12 MRSA §§ 775)	Relevant and Appropriate	The State of Maine has authority to research, list, and protect any species deemed endangered or threatened. The Maine Department of inland Fisheries and Wildlife determines appropriate use(s) of various habitats on a case-by-case basis. The Maine lists may differ from the federal lists of endangered species.	No known endangered or threatened species or critical habitat is located on the site; however, Clark's Island is used by nesting birds. Monitoring activities will be in compliance with this act.
Other Natural	Maine Significant Wildlife Habitat Rules (06-096 CMR 335)	Relevant and Appropriate	These rules outline the requirements associated with a Natural Resources Protection Act permit for an activity impacting significant wildlife habitat, including certain seabird nesting islands.	No significant wildlife habitat is located on the site; however, Clark's Island is used by nesting birds. Monitoring activities will be in compliance with these rules.

TABLE C-3

**ACTION-SPECIFIC APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS, ADVISORIES, AND GUIDANCE
PORTSMOUTH NAVAL SHIPYARD
KITTERY, MAIN**

Medium or Activity	Requirement	Status	Requirement Synopsis	Evaluation/Action to Be Taken
STATE				
Water/Sediment	Regulations Relating to Sampling Procedures and Analytical Procedures (06-096 CMR 580)	Relevant and Appropriate	Establishes standards whereby all sampling and analysis will be performed according to accepted technical procedures for chemical and biological analysis.	Monitoring activities activities will be in compliance with this law.
Other natural Resources	Special License (12 MRSA 6074	Applicable	Special license for research issued by Maine Department of Marine Resources that exempts holder from one or more marine resources' laws as to the time, place, length, condition, amount, and manner of taking or possessing a marine organism.	Monitoring activities will not require a permit but will comply with the substantive requirements.